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LONDON, NOVEMBER 7, 1952

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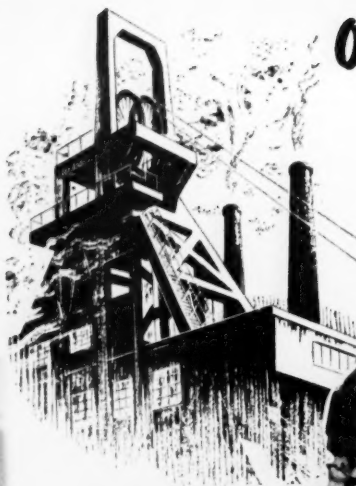
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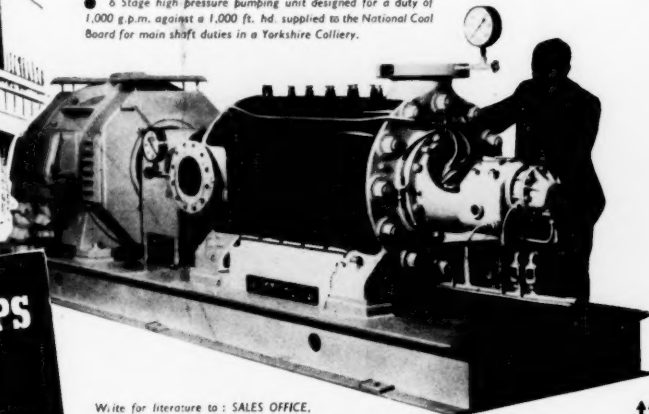
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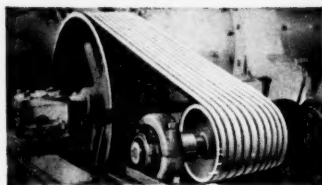
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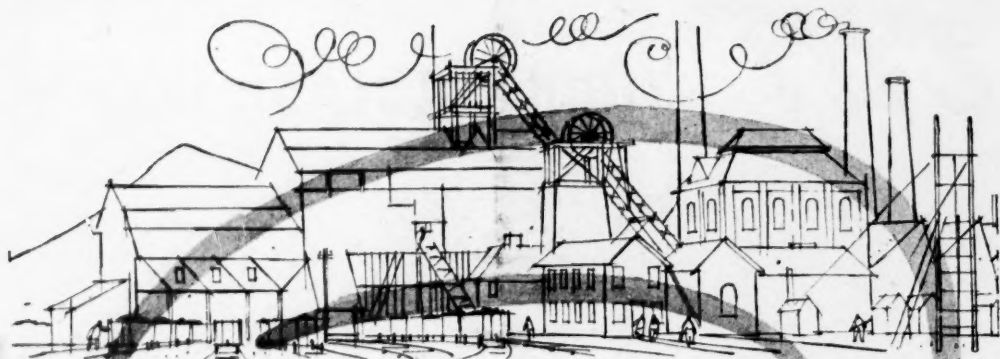
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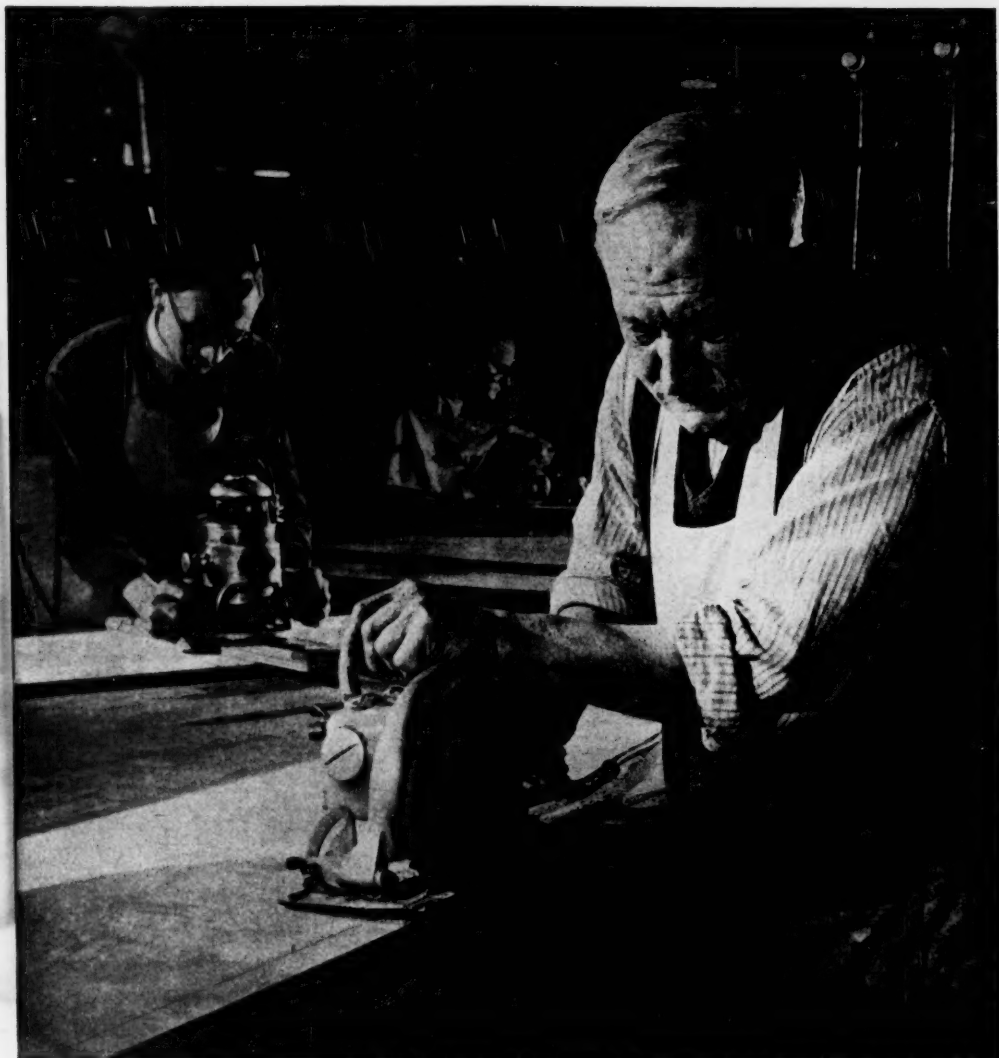
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NOTES AND COMMENTS

A Momentous Week

The past week has been notable for several outstanding developments which will affect the course of history, probably for some years to come. The first, and by far the most important, is the result of the Presidential election in the United States which, after a campaign of unparalleled strenuousness for over two months, has put an end to the Democratic twenty-year term of government. It is perhaps significant of conditions to-day that no Press writers or those augurs of public opinion, the "pollsters," as they are elegantly denominated, dared to anticipate the landslide by which Mr. Eisenhower has been returned as the next occupant of the White House with the record figures of 31,024,749 votes against his opponent's 24,948,441. The swing of the pendulum doubtless accounts for some of the landslide, but we may suspect the increasing women's vote as a contributory cause.

To attempt to pass upon the result would be an impertinence. We may wonder how the great labour unions, or, to speak more accurately their leaders, will adjust themselves to the new order. Mr. Eisenhower is reported to have said that the Taft-Hartley Act must be repealed, but since the application of that Act has been studiously avoided by President Truman, the effect of its elaborate provisions for restraining the intrusion of politics into labour relations is still largely unexplored. Rather, the course of American trade and industry will be decisive, since if the pay packet is improved the United States workman, as a realist, would probably be satisfied with the efforts of conciliation boards. He may have had enough of the threat that the Act provides, in the last resort, for the administration taking over the operation of big sections of industry.

The three chiefs of American unions, Mr. Green, Mr. Murray and Mr. Lewis representing the A.F. of L., the C.I.O., and the American Miners' Federation, all gave their support to Mr. Stevenson, but how far the individual operatives followed their lead it is impossible to say. What will be followed with much interest abroad will be the extent to which Mr. Eisenhower has tied himself to

the Republican Old Guard with its predilection for Isolationism and repeated demands for greater tariff walls. The objective of the framers of the American Constitution is always understood to have been to keep the administration, the legislature and the judicature in strict subordination to one another. It may be that this somewhat negative balance of power theory will now have to be modified.

Individually both the Republican and the Democratic candidates were exceptional men of high character and liberal views. The American people may be congratulated on the emergence of two such outstanding personalities in public life. The results of the election on public policy, internal and external, will now have to be appraised and the appointments which Mr. Eisenhower will make to the various offices of state is likely to be the first indication of what changes may be expected in the structure of United States policy. Incidentally, it is thought that the Republican victory improves the prospects of a reconsideration of the U.S. gold policy in the direction of raising the gold price.

The second major development of the week is, of course, the Queen's speech at the opening of Parliament on Tuesday, and the statements by the Prime Minister and the Leader of the Opposition at the opening of the Debate on the Address. As this was the first occasion on which Her Majesty opened a new session of Parliament it attracted exceptional interest, and by all accounts the Queen handled an exacting ordeal with great competence and charm. The Queen's Speech referred to ten bills constituting the Government's legislative programme for the new session. The most important are the Transport Bill, the Iron and Steel Bill and the Bill for Amending the Town and Country Planning Acts of 1947, in relation to development charges. Some of our readers may be glad to note that encouragement is to be given to those engaged in agriculture, mining and industry. But the experience of many years will not lead to any extravagant hopes of anything effective being done to promote the development of mining operations, metalliferous or otherwise—coal min-

ing of course remains a nationalized industry with all the resources of the State behind it. A revision or repeal of the development charges under the Town and Country Planning Act would be no small encouragement in the promotion of new mining undertakings.

But when all is said and done, the most important statement in the Speech from the Throne is the promise that the Government will proceed resolutely with the task of placing the national economy on a sound foundation. Even the Leader of the Opposition did not venture to deny that there had been a "temporary" alleviation in the position of the national economy, but declared that there were "very, very serious indications to-day of a worsening in our position." When we recall the threatened national collapse which led to Mr. Attlee's resignation in 1951, it savours of "Satan rebuking sin" for him to accuse the Government now of complacency.

Mr. Churchill's speech recalled the House to a more realistic frame of mind, when he pointed out that a year ago we faced a crisis of the first magnitude with the highest taxation in the world, and were moving into bankruptcy and economic ruin at a hideous pace. In declaring that the present administration had warded off eminent catastrophe by many painful measures and is strengthening our margin of safety, he said no more than is generally conceded by financial and business opinion both here and generally abroad.

Confiscation in Bolivia?

A Government decree nationalizing the Patiño, Hochschild and Aramayo tin mines was signed in La Paz on Friday of last week. As the Matilde Mining Co. and Huanchaca are included in the subsidiary holdings it would appear that nationalization is not confined to tin mines alone but to the holdings of the three principal operating groups. All machinery, installations, buildings, engines, plants, experimental laboratories, roads and means of communications, equipment and transport, electric power stations, stores and mineral products are taken over as well as the companies' research programmes, technical information plans, accounts, books, documents and archives. How far the companies' representatives have anticipated this step and removed either originals or copies of the documents listed we have no means of knowing, but obviously, without these records they might be considerably hampered in the preparation of their statements in rebuttal of the charges against them. Officially the action of the Bolivian Government is described as nationalization of the mines; if certain figures have been correctly reported it would appear to be more accurately described as confiscation. The three Bolivian concerns are said to have placed a value of \$60,000,000 on their properties whereas the provisional figure for indemnity is given in a La Paz report as \$21,750,000, made up as follows: Patiño Mines, \$2,707,707 and Bs.218,876,797; Bolivian tin and tungsten mines \$211,213 and Bs.41,378,536; Cia. Unificada Cerro Potosi, \$1,847,385 and Bs.18,328,600; Oruro Mining Co., \$266,983; Matilde Mining Co., \$1,724,847 and Bs.4,153,310; Bolsa Negra, \$831,250 and Bs.5,989,981; Oplaca, £87,657; Pampa Grande, \$2,210; Venus, \$6,555.

But now we come to the contra side of the account which enabled President Estensoro to allege damage caused by the "big three" as wiping out any claims for compensation. According to a Dow Jones report from La Paz, the Bolivian Government has billed the companies for no less a sum than \$520,000,000, on the charge that they have made illegal profits through foreign exchange manipulation and evasion of income taxes, it may be recalled that some months ago the Bolivian Government made charges of inflicting grave injury on the national economy

for many years past which seemed rather irrelevant unless these allegations were to be used as a cover for absolute confiscation.

When we remember that at the beginning of the century the Bolivian tin output was approximately 5,000 tons a year and that its quota was something over 46,000 tons when restriction was inaugurated, that it had in consequence become a main source of revenue of the Government and that this immense advance was due almost entirely to the enterprise and organization of the three principal tin producers, the absurdity of the charge of years of sabotage verges on the ludicrous.

What will be the effect of the Government action on the Bolivian mining industry with its secondary influence on world production supplies? Bolivia has got to sell its tin concentrates and even if the chimerical scheme of erecting a big smelter in the country were to be undertaken it would certainly be some years before this could be in a condition to operate. Meanwhile the administration has got to find sources of revenue. It seems hardly likely that the United States Government will smile upon these imitators of President Mossadeq even though they have reduced their asking price from 150c. to 117½c. per lb., nor does it seem logical that having denounced the Patiño organization as "malefactors of great wealth," to quote President "Teddy" Roosevelt's famous phrase, they should continue to employ the Liverpool smelter to treat their concentrates and sell the tin. We shall have to discover by experience how the Corporación Minera is going to find the money to pay the miners who have been encouraged to look for improved wages and conditions under their leader, Sr. Lachine, now Minister of Mines. Deprived of the skilled direction of the technicians and consultants largely responsible for progress that has been made, it may well be that after a brief period of picking the eyes out of the mines, Bolivian production will rapidly wither and so help to restore a balance between supply and demand in the amount of tin in the world generally.

A Century of Derbyshire Lead Mining

The date at which lead mining commenced in Derbyshire cannot be authentically determined.

Early mining activity can be traced back to the time of the occupation of this country by the Romans who both mined and smelted lead, but it may well be that they were only carrying on an industry already begun. Pliny the Elder (A.D. 23-79) in one of his works, stated, "In Britain lead is found near the surface of the earth in such abundance that a law is made to limit the quantity that shall be gotten." More concrete evidence of Roman mining activity was the discovery, near Cromford, in 1777, of a Roman pig of lead weighing 126 lb., with a Latin inscription referring to Emperor Hadrian. Six years later another Roman pig of lead was found weighing 84 lb. near Matlock, and subsequently two more blocks were found, one of which indicated that it was a tribute to Tiberius Claudius Caesar (A.D. 14-37), and was labelled as being free from silver.

The monarchs of England were no less interested in Derbyshire's mineral treasure and it is recorded in the reign of Edward I that an inquisition was held at Ashburn in which it was proved that the Crown had a claim to dues from all who worked the mines. This is one of the earliest references to the Crown laying claim to the Derbyshire lead mines, but as the Domesday Book mentions that there were three mines at Wirksworth, and one each at Crich, Ashford, Bakenwell and Matlock, there might very well be earlier references which have not yet come to light. In any event, the Crown's claim to dues from the Derbyshire lead mines was established by the end of King

Edward IV's reign and by 1690 the procedure for collection was more organized; the Mineral Duties of the High Peak district had been vested in the hands of the Dukes of Devonshire under lease from the Duchy of Lancaster.

At the present time all lead mining in Derbyshire is governed by the High Peak Mining Customs and Mineral Courts Act 1851, and the Derbyshire Mining Customs and Mineral Courts Act 1852. These two Acts are very similar and many of the clauses contained in the High Peak Act of 1851 have been copied seriatim into the Act of 1852. Under these two Acts the Queen, in right of her Duchy of Lancaster, is entitled to the Mineral Dues in the Hundred of High Peak and in the Wapentake of Wirksworth. The carrying out of all matters and forms in connection with the two Acts is entrusted to a Steward, Deputy Steward, Barmaster, Deputy Barmaster, and a Grand Jury in each district. These officers hold Courts called the Great Barmote and Small Barmote Courts, at which all matters and disputes in connection with lead mining are settled.

The significance of these two Acts is that they legalized the traditional customs and privileges enjoyed by the miners who, since time immemorial had the right to search for lead within the King's Field in Derbyshire upon payment of mineral duties to the Crown through the Duchy of Lancaster, or the Crown's lessees, regardless of who actually owned the land being mined. Naturally this right has always led to many disputes between miners, and between miner and landowner. The Barmote Courts' records of which date back to the 13th Century but which almost certainly were in existence during the time of the Roman occupation were formed to try actions of title, trespass and debt arising from these disputes. But as time went on the laws governing their decisions became an amorphous and anachronistic collection of conflicting precedents and the Derbyshire Mining and Mineral Courts Act was passed in 1852 to define and amend the mineral customs and to make better provision for the administration of justice in the Barmote Courts.

The Derbyshire Mining and Mineral Courts Act, 1852, made provision for the appointment of officers and the election of twelve grand jurors to the Great Barmote Court who are responsible for "viewing" recently discovered lead veins and deciding titles to land. They also laid down a scale of fines for offenders. The Great Barmote Court at Wirksworth still has full jurisdiction in the settlement of miners' claims and disputes in the Soke and Wapentake of Wirksworth in Derbyshire, and sits twice a year, with full ceremony, to hear "all persons having business before the King."

On October 30 last the Great Barmote Court opened its session with the traditional declaration, "The Great Barmote Court is now in session and all persons having business before the King will be heard." But this year's session was destined to be a special occasion, commemorating as it does the centenary of the 1852 Act, but it has been rendered particularly noteworthy by the fact that Her Majesty the Queen has graciously consented to accept a medal especially struck to commemorate these ancient rights of the lead mining community in Derbyshire. It is cast, appropriately enough, in lead mined in Derbyshire by the Derbyshire Stone Co. The refining of the lead was undertaken by Messrs. H. J. Enthoven & Sons, one of the most prominent lead refiners in the country, at their Darley Dale Smelter in Derbyshire.

The medal was presented to Major Symonds, the Steward of the Great Barmote Court, by Mr. K. L. Cobb, the Managing Director of H. J. Enthoven & Sons, at the Mote Hall in Wirksworth.

At a luncheon following the ceremony the Clerk of

the Council of the Duchy of Lancaster, Sir Norman Warwick, was asked to accept it for Her Majesty the Queen. Other distinguished guests at the luncheon included the Lord-Lieutenant of Derbyshire, Lord Scarsdale, the High Sheriff of Derbyshire, and the Attorney General.

The reverse of the medal bears the new Duchy Arms as depicted on the County Palatine Seal, struck here for the first time. The Queen has not seen the new design before.

This is the first time since the accession of Maria Theresa in Austria in 1743 that a lead medal has been struck in this country. It was designed by Mr. E. Carter Preston.

Norway's Mineral and Metal Trade

(From Our Norwegian Correspondent)

The Official Report on Norwegian Trade for the first six months of the current year, was published recently by the Central Bureau of Statistics. Imports were valued at Kr.2,860.9 million against Kr.2,576.5 million in the first half of 1951. Exports were valued at Kr.1,995.8 million against Kr.1,853.1 million. Imports thus exceeded exports by Kr.865.1 million compared with Kr.723.4 million a year ago. The figures for the same period of 1951 are given in brackets.

IMPORTS

Among imports may be noted a decrease in coal at 406,560 tonnes (649,653). There were increases in china clay 14,181 tonnes (13,352), cryolite 2,052 tonnes (905), gypsum 18,332 tonnes (15,760), and coke 158,304 tonnes (112,686).

Chromite imports were down at 23,363 tonnes (29,542), but bauxite and alumina imports were higher at 14,584 tonnes (12,121) and 31,083 tonnes (30,003) respectively. Manganese ore fell to 88,161 tonnes (114,413) and zinc ore to 34,422 tonnes (48,828). Imports of raw copper were 1,569 tonnes (648); and of raw aluminium 857 tonnes (1,028); raw lead imports were 4,108 tonnes (5,137); raw tin shipments were less at 228 tonnes (249).

EXPORTS

Among the mineral exports were sulphur 40,233 tonnes (39,349); graphite 1,878 tonnes (1,844); mica 281 tonnes (300). There was an increase in iron ore 15,701 tonnes (14,345) and in concentrates at 139,512 tonnes (95,200); iron pyrites were up at 98,582 tonnes (67,155), while cupreous iron pyrites were 82,866 tonnes (56,564). Shipments of molybdenite were heavily down at 108 tonnes (178), while copper ores made 4,330 tonnes (4,542).

Ferro-alloys were generally lower with ferro-chrome 10,964 tonnes (12,198); ferro-manganese 40,390 tonnes (43,809); ferro-silicon-manganese 11,484 tonnes (13,410). On the other hand ferro-silicon made 26,696 tonnes (25,372). Shipments of pig iron were rather lower at 18,470 tonnes (21,500).

In the metals raw copper was higher at 4,069 tonnes (3,231) and in raw nickel at 5,636 tonnes (4,938). Raw aluminium on the contrary was lower at 17,648 tonnes (21,821); while raw zinc fell to 9,694 tonnes (14,700).

In the chemical section calcium carbide was lower at 9,566 tonnes (10,141); nitrate of lime was 456,363 tonnes (434,357); calcium cyanamide 9,461 tonnes (14,134); ammonium nitrate 295 tonnes (704); and sodium nitrate 1,424 tonnes (2,015).

THE DIAMOND INDUSTRY IN 1951.—I

The Diamond Industry in 1951

By W. F. FOSHAG and GEORGE SWITZER

The Jewelers' Circular—Keystone's Report on the Diamond Industry in 1951 was published at the end of last month and contains a full report on all sections of the industry. The following is an abstract.

A new high record was established in 1951 when the value of diamonds sold totalled an estimated £68,000,000, an increase of about 30 per cent above 1950. The Diamond Trading Corporation, acting for the African producers, sold nearly £65,058,000. The remainder was divided principally between Brazil, Venezuela and British Guiana. A 15 per cent increase in diamond prices in March brought sterling prices to full parity with the dollar prices which were in effect before the devaluation of sterling in 1949. From the above figures, however, it is evident that the increased sales for 1951 is only partly attributable to this cause, also having been influenced by increased production of rough through increased mining activity and better milling practices.

A sharp increase in the sales of industrial diamonds featured the 1951 market. This was doubtless due to the rearmament programme of the Western Powers, and strong buying by the United States for stockpiling purposes. The market for industrial stones has also been affected by the increased emphasis on mining and petroleum exploration and development.

In spite of the high level of the diamond industry, diamond cutting is still beset with unemployment, indicating an over-extended condition in this branch of the industry. Only in Germany and South Africa is there reasonably full employment. Since the sales market for gems has reached equilibrium, the cutters' pleas for more rough could hardly solve their problem. Restrictions on the number of apprentices and new workers, such as those adopted by the South African, English and Belgian groups, are designed to correct this situation.

One of the principal elements of the diamond industry is the jewellery trade in the United States, since that country is the largest market for these gems, regularly consuming about 75 per cent of the world production. The diamond market in the United States showed little significant change, in spite of increased disposable income in 1951, and an increase in marriages over 1950. Investment buying, as a hedge against inflation, was an important factor abroad, particularly in Asiatic countries, but was not conspicuously evident in the United States. Available supplies of stones were ample except in top quality grades where some short supply was reported.

The introduction of synthetic rutile in the gem trade was a source of superficial disturbance, but experience showed that this material will prove no threat to diamonds. Synthetic rutile, or titania, is an artificial mineral with high brilliance and dispersion and has much merit in its own right. It lacks, however, some of the important desirable characteristics such as hardness, as well as the sentimental appeal of the diamond, which appeal has never been seriously challenged by any other stone.

WORLD PRODUCTION

Accurate figures regarding diamond production are not available for all countries. Exact figures received from official sources are given in most instances. Where estimates are given they are believed to be reliable.

Total world production of diamonds during 1951 was the highest in history, and approximately 1,500,000 ct. higher than in 1950. Details are given in the following table:

World Production of Diamonds, 1949-1951
By Countries, in Metric Carats
(Including Industrial Diamonds)

Country	1949	1950	1951
Africa:			
Angola	769,981	538,867	751,447
Belgian Congo	9,649,896	10,147,471	10,564,667
French Equatorial Africa	122,928	111,407	136,000
French West Africa	94,996	126,346	101,000
Gold Coast	1,972,976	950,000	1,600,000
Sierra Leone	494,119	655,474	475,759
South-west Africa	280,134	488,422	478,075
Tanganyika	191,787	195,274	108,625
Union of South Africa:			
Lode	964,266	1,516,194	1,967,272
Alluvial	289,756	231,674	289,063
Brazil ¹	250,000	200,000	200,000
British Guiana	34,790	37,462	43,260
Venezuela	56,362	60,389	63,226
Other countries ²	3,000	3,000	3,000
Grand Total (Round Figures)	14,175,000	15,260,000	16,780,000

¹Exports.²Estimated.³Includes an estimated 100,000 ct. for State Mines of Namaqualand.⁴Revised.

South Africa.—In 1951 total production in the Union of South Africa and South-West Africa was 2,634,410 ct. valued at £20,416,056. This does not include production from the State diggings in Namaqualand, which figures are not published. Details are:

	Carats
Mine production	1,967,272
Uncontrolled alluvial production	153,041
Consolidated Diamond Mines of S.W. Africa	478,075
Production by independent sources	36,022
Total	2,634,410

De Beers Group.—De Beers Consolidated Mines continued to produce chiefly from the Dutoitspan and Wessellon Mines in Kimberley, and the Jaegersfontein Mine in the Orange Free State. The Premier Mine, operated by a De Beers subsidiary, the Premier (Transvaal) Diamond Mining Co. Ltd., is also a major producer. Smaller production was reported from numerous other areas. Production from the Wessellon Mine is about 50 per cent industrial grade, while 80 per cent of the Premier Mine production is industrial.

Of the total 1951 production from the Union of South Africa, production from the De Beers group of mines was 1,952,000 ct.

As in 1950, only two mines outside the De Beers group showed results of any importance during 1951. Their production was 1,876 ct from Leicester Mine and 13,396 ct. from Star Diamond Mine.

South African Camps.—The alluvial diggings of South Africa have shown little change. There is little available new ground to replace old ground as it is exhausted. However, increased prices for rough have stimulated increased production in 1951. Total uncontrolled alluvial production in 1951 from the Union of South Africa was 153,041 ct., valued at £1,323,012, for an average price of 172s. 11d. This is a considerable increase over the 91,666 ct. valued at £893,643, produced in 1950.

In the Kimberley District production came very largely from Nootgedacht, the area thrown open by De Beers

to assist the diggers. More than 100 new claims were opened for pegging during 1951, resulting in greatly increased production. Total production from this area amounted to 12,367 stones weighing 13,573 ct., and valued at £176,815, for an average value of 260s. 5d. Included in the finds at Nootgedacht was the Venter diamond, a yellow octahedron of 51½ ct. The Nootgedacht diggings are owned by De Beers and diggers pay the company a 10 per cent royalty on all diamond finds.

South-West Africa.—The alluvial diamondiferous deposits of S.W. Africa extend from the mouth of the Orange River north for 300 miles to Conception Bay. They are a northward extension of the Namaqualand occurrence of Cape Province. The Consolidated Diamond Mines of South West Africa, Ltd., holds the diamond rights to much of this area under a concession extending to 1991. The chief producing areas are Area G, Bogenfels, Elizabeth Bay, Area U and Chameis. It is expected that Area M will be brought into full production during 1952. Their production shows a steady increase. Ten years ago production was 46,600 ct. In 1951 it totalled 478,075 ct., an increase of approximately 100,000 ct. over 1950.

In 1951 the monthly average was 39,839 ct., compared with 31,466 ct. per month in 1950. The average yield per cu. metre mined increased from 0.81 ct. in 1950 to 0.92 ct. during 1951, due to higher yields from Area U and Chameis. The overall yield was 7.9 ct. per 100 loads of ground mined and overburden stripped. With the higher proportion of production obtained from Area U and the smaller size of diamonds recovered from Chameis the average size of diamonds recovered from all areas decreased from 1.26 ct. in 1950 to 0.96 ct. per stone in 1951. A further slight decrease in average size is expected when Area M is brought into full production.

Mining operations continued throughout the year in Areas G and U. In October mining was started in a small rich area at Chameis, 70 miles north of Area G. Only a small quantity of diamonds were mined at Elizabeth Bay.

Ground mined, including prospecting, totalled 511,028 cu. metres, an increase of 40,537 over 1950. Sand overburden stripped for mining and prospecting amounted to 2,239,616 cu. metres.

Two new field screening plants were completed during the year, and a heavy media separation plant put into operation in May functioned satisfactorily. Electrostatic separators and continuous grease belts are under construction and will be put into operation in 1952.

Prospecting was continued, especially around Areas U and M, and at Chameis. Payable areas proved during the year contain an estimated 1,968,000 ct. of diamonds.

Belgian Congo.—The diamondiferous area of the Belgian Congo occupies a wide area covering the tributaries of the Kasai-Sankuru River system, one of the important confluent rivers of the Congo. The two principal productive areas are the Kasai area, including the upper Kasai River and its tributaries and the Bushimaie area, following the Bushimaie, a tributary of the Sankuru. All the production is derived from alluvial deposits. The source of the diamonds in the stream's beds are probably the basal conglomerate of Lubilashe sandstone series, that covers a wide expanse in this region. Pipes of low diamond content are known in the Katanga District, and a diamondiferous pipe has been reported in the Kasai District.

The Belgian Congo continues to be the world's largest producer of diamonds in quantity, but is second to South Africa in terms of value. Belgian Congo production is approximately 95 per cent industrial grade and this country supplies about three-fourths of the world's supply of crushing bort.

Production for the past two years was 10,147,471 ct. in 1950 and 10,564,667 ct. in 1951. Production for 1951 by companies in carats was: Forminière, 389,318; Consortium E. K. L., 148,334; Bécéka, 10,027,015.

Angola.—The diamondiferous area of Angola is a continuation of the diamond-bearing region of Kasai, Belgian Congo, and covers the extreme headwaters of the Kasai River. Like the Congo diamond occurrences, the deposits are alluvial in nature, and are related to the Lubilashe sandstone series. The Companhia de Diamantes de Angola is the sole producer. In addition to the usual washing plant a Heavy Media Separation plant has been installed, and a small electrostatic separator is under test. Production in 1951 was 751,447 ct. The insured value of the 1951 production was £3,563,162.

French Equatorial and East Africa.—During 1951 the Economic Co-operative Administration made contracts with the Société Minière Intercoloniale (S.M.I.), an entirely French-owned company with headquarters at Berberati, in Oubangui-Chari. S.M.I. is one of the three leading diamond producers of the region. Under the terms of the contract E.C.A. is to advance up to 85,000,000 francs for exploration for diamonds in S.M.I. properties north of Bria. If the exploration is successful a new agreement may be reached involving an advance up to 166,250,000 francs for production purpose. A second contract with S.M.I. provides an advance of up to 205,000,000 counterpart francs for the expansion of diamond producing areas east and north of Berberati. In addition to the E.C.A. advance, S.M.I. will invest substantial funds on its own account to adequately equip the operation with specialized equipment. Repayment to E.C.A. will be made in industrial diamonds or other materials.

A contract was also granted to the Union Minière Africaine, a French-American enterprise owned equally by the Grivar Exploration and Development Corporation and the Société Minière Ogaue Lobaye, for the purpose of exploiting alluvial deposits along the Labay River, in Oubanghi.

Previous E.C.A. diamond development contracts for French Equatorial Africa were made with the Compagnie Minière de l'Oubanghi Oriental (C.M.O.O.) and some of its subsidiaries.

Production in 1951 was estimated at 136,000 ct.

The Compagnie Minière de l'Oubanghi Oriental produces about one half of the diamonds of French Equatorial Africa. Its workings are principally in the Upper Sangha River Valley in the area about Carnat, Berberati and Nola. It has organized several subsidiary companies to explore or exploit other areas in the colony.

The principal diamond deposits in French West Africa are in Haute-Guinée, midway between Beyla and Kisi-dougou. The deposits are worked by open pit methods and the concentrates sorted by hand.

Production in 1951 was 101,000 ct.

Tanganyika.—As a result of withholding deliveries by Dr. Williamson, diamond exports from Tanganyika during 1951 fell to 8,588 ct.

Production for the last two years was 195,274 ct. in 1950 and 108,625 ct. in 1951. Out of 40,604 ct. exported in 1950, 21,751 ct. or 53 per cent were cuttable stones, and 18,853 ct., or 47 per cent, were industrial stones. The mine has continued in operation and stones have accumulated.

A heavy media plant was installed by Williamson Diamonds in 1950, to which a Kipp Kelly air flotation chamber, electrostatic separator, screen grader and magnetic separator have been added to improve recovery. The recovery plant now installed is designed to handle 3,000 tons of diamondiferous gravel per day.

Recovery of Thallium from Smelter Products

One of the rarer metals that has come into commercial importance during recent years, thallium occurs widely in the earth's crust, but in such low concentrations that it is recovered only as a byproduct from processing other elements. At present, thallium is supplied in America by products of the American Smelting and Refining Co.'s cadmium operations at Globe, Colorado, as well as from the flue dusts of sulphuric acid works and as a byproduct of the lithopone industry. The following article is condensed from Report of Investigations 4900, published under the same title by the United States Bureau of Mines. The paper was written by J. D. Prater, D. Schlain, and S. F. Ravitz, and describes methods for the recovery of thallium from "white arsenic" and lead Cottrell-precipitator dust of the American Smelting and Refining Company's lead smelter at Murray, Utah.

In the early part of the investigation, the material used was white arsenic, which contained 96 per cent arsenic trioxide and 0.21 per cent thallium. As a result of the Bureau survey, the dust from the lead Cottrell-precipitator, which contained as high as 3 per cent thallium, was removed from the circuit and stockpiled instead of being recycled; this resulted in a white arsenic product containing only 0.03 per cent thallium. The investigation was re-directed to a study of the recovery of thallium from the stockpiled material.

The arsenic was volatilized successfully, and the thallium was retained in the residue by fuming white arsenic at 430° C. for 0.5 hour in an air stream. Five per cent sulphuric acid was added to the charge to increase retention of the thallium, and lime was added to improve the physical characteristics of the residue. Although the residue was refractory to extraction of thallium by leaching, the thallium was removed from the residue by volatilization with sodium chloride at 800° C.

A cyclic process is presented for recovering a pure thallium salt from lead Cottrell-precipitator dust, which assayed 1.43 per cent thallium and 55 per cent lead. The process includes leaching the dust with water at 90° C. and crystallizing crude thallous chloride from the leach liquor by cooling to 25° C. The mother liquor is recycled to the leaching circuit and the crude crystals are refined to yield thallous chloride of over 99 per cent purity.

SEPARATION BY VOLATILIZATION

Volatilization tests were made in a Hevi-Duty tilt-top combustion furnace with a stainless-steel tube, the auxiliary equipment including a manometer for determining air velocity flowing through the volatilization tube and a combustion furnace with a pyrex tube for preheating the air before it flowed into the volatilization tube. The fume-condensation system consisted of four "kitchens" in series and several gas-adsorption bottles filled with sodium hydroxide solution. The periphery of the first and second kitchens and all connecting tubes from the outlet of the furnace to the second kitchen were wound with resistance wire connected in series with variable resistors so that the fume-condensation temperature could be controlled. The temperature of the volatilization chamber was determined with a Leeds & Northrup potentiometer and chromel-alumel thermocouple, the hot junction of which was placed about $\frac{1}{4}$ in. above the centre of the boat containing the charge.

In the experimental procedure, the furnace and kitchens were brought up to the temperature of the test, and air was drawn through the system for about one hour to establish equilibrium. The stainless-steel boat containing the charge was placed on a cradle in the centre of the tube in the volatilization furnace, and the system was closed and maintained at constant temperature for the duration of the fuming time. The fume was carried over into the kitchens by the air stream where it was condensed. Following fuming, the combustion tube was cooled rapidly, the system was cleaned, and the several products were weighed and analysed.

The standard charge for each test consisted of 75 grams of white arsenic and 3.75 grams (5 per cent) of the addition agent being studied. All reagents except sulphuric acid were added dry; sulphuric acid was added as a 5 per cent solution and the resulting paste heated in a water bath at 94° C. until most of the water was driven off. When lime and sulphuric acid were used together, the lime was added after evaporation of the water. In each test the tube was held at the temperature of the test for 0.5 hour, with an air flow of 19 cu. ft. per hour at room conditions.

The white arsenic used for the tests contained 0.21 per cent thallium, 96 per cent arsenic trioxide, 2.7 per cent antimony, 0.45 per cent lead, and 0.29 per cent sulphur. Preliminary tests without any addition reagent indicated that all material volatile at the temperature of the test was almost completely removed in 0.5 hour. Thallium retained in the residue and arsenic volatilized was independent of velocity of air flow, provided the stream of air was adequate to carry the fume into the kitchens. Volatilization of thallium was independent of temperature from 430° C. to 490° C., while volatilization of arsenic was increased 20 per cent by increasing the temperature.

DISCUSSION OF THE RESULTS

Addition reagents effective in increasing thallium retention without increasing arsenic retention included ammonium sulphate, sulphuric acid, lime, and sulphuric acid and lime. Sodium chloride increased thallium volatilization, and all other reagents tested had little effect on thallium volatilization.

Sulphates of arsenic are difficult to form and are unstable at elevated temperatures. Küh has reported the formation of a series of arsenious sulphates by solution of arsenic trioxide in concentrated sulphuric acid, fuming sulphuric acid, and sulphur trioxide; but all are decomposed by water. Adie earlier reported that $As_2O_3 \cdot SO_3$ loses SO_3 at 225° C. Thallous sulphate, on the other hand, is relatively stable even at elevated temperatures. The thallium in the flue dust probably combined with the sulphate, forming the non-volatile thallous sulphate, and the arsenic remained as the oxide and volatilized at the temperature of the tests.

Ammonium sulphate was the most-effective sulphate for volatilization of impurities, as indicated by the smaller weight and higher thallium content of the residue at each temperature. Slight loss of thallium was noted when the temperature was increased above 430° C. with ammonium sulphate. At 450° C., 3 per cent of the thallium was volatilized; and, at 490° C., 8 per cent was volatilized.

Addition of lime with sulphuric acid increased volatilization of arsenic at 430° C. without decreasing recovery of thallium in the residue. Whereas 20 per cent of the arsenic was retained in the residue at 430° C. with sulphuric acid, only 2 per cent was retained when lime was added also. Without lime, the residue fused to a glass when either sulphuric acid or ammonium sulphate was used, but a porous residue was obtained when lime was added. Addition of 1 per cent sulphuric acid retained 96 per cent

of the thallium in the residue. When less than 5 per cent lime was added, partial fusion of the residue occurred.

Although a mixture of sulphuric acid and lime prevented volatilization of thallium, calcium sulphate did not depress thallium volatilization. Decomposition of the added sulphate at the temperature of the test appeared to be essential. Calcium sulphate does not begin to decompose until 1,200° C., and decomposition temperatures of ammonium sulphate and sulphuric acid are lower than that of thallous sulphate. Ammonium sulphate begins to decompose at 100° C. and sulphuric acid at 330° C.

RECOVERY FROM LEAD COTTRELL-PRECIPITATOR DUST

Two samples of lead Cottrell-precipitator dust showed the analyses of each to be:

Analyses of Cottrell-precipitator material

Sample No.	Analyses, per cent									
	Tl	Pb	As	Cd	Sb	Fe	Zn	Se	Te	Cl
1	1.43	54.8	6.8	5.4	1.1	0.85	2.7	0.82	0.16	3.4
2	1.43	54.4	4.6	2.1	1.1	1.00	0.8	0.44	0.43	4.2

Preliminary tests were made in which slurries of dust and lixiviants were agitated mechanically to determine thallium extraction when various solvents were used. Other variables studied were leaching time, temperature, pulp, density, and particle size of the dust. Ninety per cent of the thallium was readily extracted from each sample of precipitator dust by leaching with water at 90° C., provided the particles were kept in suspension and the slurry was dilute enough that the solution did not become saturated with thallous chloride. Approximately 50 and 25 per cent of the arsenic was extracted from samples 1 and 2, respectively. The precipitator dust leached rapidly when reduced to minus 35 mesh (45 per cent plus 100 mesh). The important data with water as lixiviant are summarized in the table below. Optimum conditions existed when the minus 35 mesh dust was leached at 90° C. in a slurry with 14 per cent solids. In 0.5 hour, 90 per cent of the thallium was extracted.

Extraction of thallium, arsenic, and chlorine from Cottrell-precipitator dust

Sample No.	Temperature, °C.	Time, hours	Solids, per cent	Extraction, per cent		
				Tl	As	Cl
1	26	0.5	50	0	36.5	—
	26	0.5	14	22.3	37.6	—
	26	0.5	9	49.7	41.2	—
	24	2.0	50	7.8	58.2	—
	24	2.0	14	21.4	50.6	—
	90	0.5	50	5.6	52.9	—
	90	0.5	14	90.5	55.9	—
	90	0.5	9	90.4	41.2	—
	90	2.0	50	8.1	56.5	57.6
	90	2.0	14	91.2	58.0	82.3
	90	2.0	9	90.2	59.4	81.2
	90	23.5	14	89.1	57.6	—
2	60	2.0	14	85.5	20.3	—
	60	4.0	14	85.5	22.0	—
	90	2.0	25	84.4	24.6	80.6
	90	2.0	20	86.0	24.6	80.6
	90	2.0	17	87.7	24.6	80.6
	90	2.0	14	89.1	24.6	—

Thallium extraction was not increased by leaching with 10 per cent sulphuric acid or 5 per cent sulphuric acid saturated with sodium chloride. With each, more than

90 per cent of the arsenic was extracted and 46 per cent of the lead was extracted with the brine solution. Leaching with 3 per cent sodium sulphate or 10 per cent sodium carbonate solution extracted 75 per cent and 45 per cent of the thallium, respectively.

RECOVERY FROM LEACH LIQUORS

Pregnant solutions obtained by leaching the Cottrell-precipitator dust with water at 90° C. were cooled to 25° C., and 50 per cent of the contained thallium was recovered as crude crystals assaying 58 per cent Tl, 20 per cent Pb, and 17 per cent Cl. The mother liquor from the crystals assayed 0.7 gram Tl, 5 grams As, and 5 grams Cl per litre.

Tests were made to study the recovery of the thallium content of the mother liquor by precipitating the thallium as the hydroxide, chloride, iodide, and sulphide. An impure thallous salt was recovered with each precipitant. When hydrochloric acid was added to increase the chloride ion concentration to 20 grams Cl per litre, 60 per cent of the thallium crystallized as thallous chloride. Addition of ammonium hydroxide or sodium carbonate to above pH 8.2 precipitated 60 per cent of the thallium as the hydroxide. Potassium iodide precipitated the thallium almost completely as thallous iodide, but 1 lb. of reagent was required per lb. of thallium recovered. More than 98 per cent of the thallium was precipitated as thallous sulphide by adding sodium sulphide at pH 8.0. The precipitate was contaminated with approximately 30 per cent of the arsenic in the mother liquor.

Since none of the methods for precipitation of thallium from the mother liquor was entirely satisfactory, a cyclic procedure was developed, which resulted in 89 per cent thallium extraction and recovery of more than 95 per cent of the extracted thallium as a pure thallium salt. Essential features of the process consisted of leaching the lead Cottrell-precipitator dust with water at 90° C. in a slurry with 14 per cent solids, crystallizing impure thallous chloride from the leach liquor by cooling to 25° C. and returning the mother liquor as the leach liquor for the succeeding cycle. The impure thallous chloride crystals were subsequently purified to yield a final thallium salt, which contained less than 1 per cent total impurities.

The crude crystals were purified by several procedures, each method yielding more than 96 per cent recovery of the thallium in refined thallous chloride crystals.

THE FINAL CONCLUSIONS

Conclusions drawn from the experiments were first, that from a white arsenic containing 96 per cent arsenic trioxide and 0.21 per cent thallium, 98 per cent of the arsenic was volatilized and more than 99 per cent of the thallium was retained in the residue by fuming with 5 per cent sulphuric acid and 5 per cent lime at 430° C. for 0.5 hour. The physical properties of the residues were satisfactory.

Second, the thallium was recovered satisfactorily from the residue by volatilization with sodium chloride at 800° C. Third, 90 per cent of the thallium in the lead Cottrell-precipitator dust tested was extracted by a cyclic process that includes leaching the dust at 90° C., cooling the leach solution to 25° C. to crystallize impure thallous chloride, and recycling the mother liquor to the leach circuit. Fourth, the impure thallous chloride crystals were readily purified into a final product of over 99 per cent purity. Fifth, over-all recovery of thallium in the refined crystals exceeded 85 per cent.

A Cross-Country Belt Conveyor

The revolutionary American project of a 130-mile rubber conveyor belt system to transport ore, coal and limestone across country has been designed by belt engineers of The Goodyear Tyre & Rubber Co. Although at the moment the project remains a plan only, it nevertheless, is an outstanding departure from traditionalism. In the following article, adapted from *Transportation*, Vol. 2, No. 12, the dimensions and capacities of the system and the savings in costs anticipated from its use are presented.

A large concentration of heavy industries, notably blast furnaces and steel mills, lies within that area of the United States bounded by Lake Erie and the Ohio River, Pittsburgh in the east and Lorain, Ohio, in the west. This is a key region in American economy, yet its productivity is to-day being endangered by serious problems. These problems, which are daily reported as becoming increasingly evident, are produced by the herded conditions promoted by cramped plants and lack of adequate stockpiling space in the area, together with rising costs of operation. The whole presents a picture of handicap to effort which does not diminish with the passing of time.

To counteract the obvious inefficiencies of the current situation, a new form of cross-country goods transportation is envisaged by Riverlake Conveyor Lines Inc. This American company proposes to link more than 130 miles of the highly concentrated area by means of a giant cross-country rubber belt conveyor, which upon completion will be the greatest conveyor belt system the world has ever known.

The new plan will eliminate many of the problems which at present are relevant to the area, by substantially decreasing the cost of transporting the millions of tons of ore, coal and limestone which are required annually by mills of the district. The project is strenuously opposed by the railways, however, and at the moment it remains in the strictest sense a plan only.

In the general design, evolved after a considerable period of preliminary work, belt engineers of the Goodyear Tyre & Rubber Co. have developed an arrangement of pulleys at the end of each belt flight which turns the belt so that it is possible to transport simultaneously two types of material in opposite directions. Their plan provides for a total of 130 miles of modern belt transportation, of which 103 miles are on main line and 27 miles on branch lines.

The Goodyear engineers have recommended a total of 172 flights of belting on the main two-way line, some of which will be more than a mile in length, while the width of the belts will vary from 42 in. on the branch spurs to 72 in. on the main way. The Riverlake belt system will travel at an average speed of 600 ft. per min. or 6.81 m.p.h., and at this rate will be able to deliver 3,400 tons of coal and 5,400 tons of the heavier ore per hour. These figures give a combined delivery volume of 8,800 tons per hour, and thus the belt system will be able to transport up to 52,000,000 tons per annum and when fully loaded will be carrying 126,000 tons throughout the complete system.

It is envisaged that the belts will be operated by electricity, with their movement controlled by push button. The controls will be able to set in motion the entire series, and to divert ore, coal or limestone to branch lines or on to storage piles. An electric eye warning device will automatically indicate distress points and act as a halting factor to the line. The motion of the belts will be noiseless.

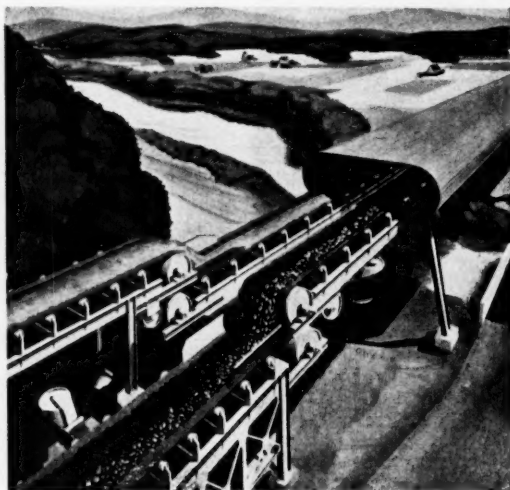
The system will present a unique appearance that may yet, however, become commonplace throughout the world. It will run within a completely enclosed steel gallery 22 ft.

above ground and 18 ft. in width. Space for a service walk will be provided between the belts, and the enclosure will eliminate dirt and spillage as well as dust. The entire conception therefore provides for an all-weather and year-round service of 24 hours per day. In its construction, the complete project will utilize 151,000 tons of structural steel, 267 miles of rubber belting, 400,000 troughing idler units, and 217 terminal power points.

The Riverlake belt line is designed to handle bulk cargo only, comprising iron ore and limestone southward bound from Lake Erie, and coal travelling north from the Ohio River. Mr. H. B. Stewart, Jr., President of the Akron, Canton and Youngstown Railroad, who is also head of River-

lake Conveyor Lines, Inc., has described the proposed conveyor system as the railway of the future, and has pointed out that it will save a minimum of \$20,000,000 and a maximum of \$45,000,000 per annum in the freight charges at present paid by industries of the area. This considerable and impressive saving will be in direct ratio to tonnage transported, for unlike the factors governing any other form of transportation, in the case of a belt conveyor the greater the volume carried up to capacity, the lower is the cost of cartage per ton.

It is anticipated that the envisaged belt system will be able to carry material in sufficient bulk to pay the cost of construction within 20 years, and simultaneously will permit of considerably reduced transportation rates. These are estimated as a maximum reduction of \$1.50 per ton of coal and 68c. per ton of iron ore. The figures of costs saved per annum are given an added importance when it is realized that after a minimum of three years required for construction, the cost of the entire system complete with coal washing plant, loading and unloading facilities and the main and two branch lines, will total approximately \$210,000,000.



A typical transfer point on the proposed conveyor system where loads of coal and iron ore can be relayed from one belt to another. Note enclosing steel gallery raised above ground

MACHINERY AND EQUIPMENT

A New British Diesel Crawler Tractor

"Over the past few years a growing need has been felt in industry for a really heavy British Diesel crawler, capable of tackling the toughest jobs in the business," state the manu-



Equipped with Le Tourneau P.C.U. and hauling Le Tourneau 15 cu. yd. scraper, the Challenger 4 works at a Yorkshire opencast coal site

facturers of Fowler Diesel Crawler Challenger 4. The Challenger 4 is the heaviest member of the Fowler team, and was designed to meet the demands of particularly heavy service, with the result that the model was only completed after two years of testing, following the designing and prototype stage.

The Challenger 4 combines many new features with tried Fowler patents, notable amongst these being the track frame suspension unit. Powered by a 150 b.h.p. 6-cylinder Diesel engine, the Challenger 4 provides 130 drawbar horsepower and a bottom gear pull of 28,500 lb. The model has been designed for bulldozer, scraper and heavy agricultural duties, and full scale production will commence shortly at the Leeds factory of John Fowler & Co. (Leeds) Ltd. In our last week's issue, the unit was reported as being on show at the firm's stand at the Public Works Exhibition at Olympia.

Among the main features of the unit are included a Meadows 6 DJ790 4-stroke Diesel engine, developing 150 b.h.p. at 1,500 r.p.m. The crankshaft is carried in seven main bearings of the thin shell, steel backed, copper lead lined type, and similar bearings are fitted to the large ends of the connecting rods. Forced feed lubrication applies throughout, and fuel injection equipment is by C.V.A. with the multiple filters in the fuel line of the same make. Cooling is by radiator, assisted by a fan and water pump driven by a Vee belt from the crankshaft. A water cooled, four stroke petrol engine is used for starting, with the cooling system of the starting engine integral with that of the main engine. Because of this factor, hot water from the starting engine circulates through the cooling jackets of the main engine, which ensures a warming through of the whole unit and allows for an easy start in the coldest temperatures. Electric starting can be supplied as an alternative to this method.

Other main features include a fabricated steel hull and main transmission housing, clutch and brake steering, and hardened steel tracks with press fitted steel pins and bushes. All wearing surfaces are scientifically hardened for prolonged life on these tracks, and two master pins per track are fitted to facilitate maintenance. The track plates are of rolled steel section with integral grousers and can be fitted with a patented quick release street plate.

The track frames incorporate the Fowler patented articulated suspension which holds the track frames in correct alignment whilst allowing oscillation over rough ground. Each track frame is fabricated from two solid steel rectangular sections, cross braced by heavy steel plate. The frames are mounted on a large diameter rear cross beam, rigidly attached to the hull.

and are free to pivot vertically. This movement is controlled by the Fowler patent double cranked axle beam, the beam being cranked at each end in the form of a Z bar, and mounted on the hull in bronze bushes. Each end of the beam is connected by links to the track frames, and thus an upward movement of one side results in an equal and downward movement of the other. The arrangement permits a large range of movement without affecting the stability of the tractor.

Additional characteristics are that power drives are provided for front mounted hydraulic equipment and rear mounted winch and power control units and the like. Substantial mountings are an integral part of the design for the fitting of ancillary equipment. In the accompanying photograph, the Challenger 4 is shown equipped with Le Tourneau P.C.U. and hauling a Le Tourneau 15 cu. yd. scraper.

The rear internal power take off shaft, running at 1,500 r.p.m. and controlled by a master clutch, is available for driving the rear mounted equipment, while a front end power take off continuously running at engine speed caters for forward mounted equipment.

New Fixture Increases Oil Refinery Capacity

According to reports recently received, the capacity of oil refineries can now be greatly increased at low cost by use of an equipment named the Turbogrid Distillation Tray, which has been developed by technicians of the Shell Petroleum Co., Ltd. in the United States. The device has been offered by Shell under licence to the entire oil industry.

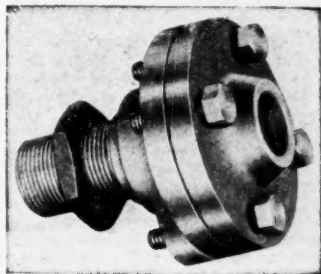
A brief review of oil distillation states that hot, crude oil is fed into the distillation unit columns and is distilled into the various components. These are separated by means of fractionating trays which are spaced at the appropriate levels in the columns. The hot oil vapours become progressively cooler as they pass up the columns, and each fractionating tray collects oil fractions of the same boiling range. At the top of the columns the trays collect liquified fractions which are possessed of the lower boiling points, whilst those having the higher boiling points collect at the bottom.

The design of the trays and their positioning in the column are thus important aspects of efficient distillation, and it is in this particular that the Turbogrid Distillation Tray represents so important an advance in oil refining technique.

In one form, the tray consists of little more than a sheet of metal stamped with parallel slots of correct width and spacing. Yet the success of the device is due to the area, width and spacing of the slots and positioning in the column.

Flameproof Cable Glands

The overall range of flameproof accessories by the General Electric Co. Ltd. has been extended by the introduction of two new flameproof cable glands. They are presented as being



One of the two new G.E.C. flameproof cable glands

suitable for pliable wire-armoured cable and have been certified for use with Group I gases by the Ministry of Fuel & Power testing station at Buxton.

METALS, MINERALS AND ALLOYS

The principal event this week, in the markets as elsewhere, has been the election of a Republican President of the United States, after an interval of 20 years. In terms of the metal markets this event makes it probable that the next Administration will view with considerably less sympathy than that of Mr. Truman, intervention by government to achieve international commodity stabilization. It is true enough that what a party says in opposition and does in office are often very different, but even so it does seem likely that we shall find an increasing inclination in Washington to leave the American mining and metal industries to manage their own affairs and it certainly seems probable that the kind of economic policies argued so forcibly in the Paley Report are less likely to be implemented than they might have been with Mr. Stevenson at the helm.

Tariffs would seem to be a case in point of particular pertinence in view of Mr. Larson's comments over the week-end referred to elsewhere in this column. The possibility of higher tariff walls being erected to enable the marginal and sub-marginal American mines to be kept in business as an alternative to subsidies is a danger which cannot be overlooked under a Republican administration.

COPPER.—As we go to press, we learn that a Government mediator has been named in the Copper Belt dispute. The offer has been accepted by the companies, but the unions' attitude will not be known before the week-end. Although the strike has not as yet affected the supplies of copper in this country, it is obvious that steps must be taken to husband stocks in case the native mineworkers are determined to prolong the strike. The Ministry does not wish to cut copper allocations for November, but forward purchases for December delivery are being limited to three-quarters of the November allocations, though the Ministry hopes that December allocations will eventually be as large as those of November.

The high price of copper is still providing strong incentive to re-examine properties which were once abandoned as being unpayable. The latest such project is a mine in the Arizona desert near Tucson, with deposits which, so it is expected, will yield ore for half a century. The deposits have been known to exist for the last twenty years, but after drilling was carried out, the development was shelved some years ago. Plans are for an ore output of 30,000 tons per day.

The resurgence of the Japanese copper using industries, the huge demand for copper in the U.S. and the inability of the Indian domestic producers to expand production is hitting the Indian copper users hard. Although imports have been rising lately, they are still insufficient by a considerable margin to reach the level at which, according to the Indian Government, supply and demand would be in equilibrium.

Some caution is being reported from New York in the placing of orders for December delivery of foreign copper. However, December buying has only just commenced and the trend should become more clearly discernible next week.

LEAD AND ZINC.—At the beginning of the week, lead advanced about £6 on the London Market and New York followed with a half cent increase to 14c. The London advance was not sustained, but indications are that there has been active New York buying at the 14c. level.

Undoubtedly, a factor in the firmer American price has been Mr. Larson's very positive statement over the week-end expressing grave concern at the number of lead and zinc mines which have been closing down in recent weeks because of falling prices. He is reported to have said that the freeing of the London Lead Market and the prospective resumption of zinc trading have created an artificial surplus of these two metals. "Actually," he said "there is no surplus of production. On the contrary, unless production of both lead and zinc can be maintained at the level that prevailed prior to the recent price declines, serious shortages are almost certain to develop next year." He added that if the price situation did not right itself soon, "every possible remedial measure will be taken to assure production of needed supplies of lead and zinc for the defence programme and necessary civilian use."

As head both of the D.M.P.A. and of the G.S.A., which

makes purchases for the stockpile, Mr. Larson is expressing the views of the Government procurement agencies. As, however, U.S. stockpile requirements are never published the market is unable to assess Mr. Larson's estimate quantitatively and is in effect being asked to take his forecast of impending shortage on trust. So long as stockpiling policy continues to be shrouded in secrecy, it really does seem that market forecasting must remain almost impossible and that the danger must remain of ill-timed stockpile operations causing the kind of upsets we have witnessed in recent years. We are familiar enough with the arguments that correctly timed stockpile purchases can in fact serve as an important price stabilizing influence but if this is to be done under open market conditions the broad policy of stockpile buying must be made known if the kind of uncertainties which have been confronting the lead market this week are to be avoided. The R.F.C. appear to have learnt this lesson over tin. It has still apparently to be learnt by other Government agencies.

The Ministry of Materials has gone some way this week towards clarifying its policy with regard to the liquidation of its large lead stocks, as is reported elsewhere in our London Metal Market column, but here again stockpile secrecy has resulted in the market having no clear idea as to how much lead producers will have at their disposal over and above their normal rate of production.

Some indication of the difficulties inherent in the vast bulk procurement programmes on which Washington is engaged is to be seen in D.P.A.'s recent announcement that its present zinc expansion target far exceeds estimates of future demand, and that it has cut back its supply target to 1,245,000 s.tons in 1956, against a U.S. production in 1950 of around 1,084,000 s.tons.

TIN.—There has been little tin news this week other than the announcement of the Bolivian nationalization programme which is the subject of a "Note and Comment" on page 514.

The quarterly bulletin of the F.M.S. Chamber of Mines is quoted by Reuter as forecasting a substantially lower output of tin concentrates than in 1951. It is difficult to reconcile this statement with the bulletin's own production estimate of 42,294 tons of tin in concentrates for the first nine months of this year, compared with an output of 42,490 tons in the corresponding period of 1951 as reported by the International Tin Study group.

ANTIMONY.—National Lead has reduced its price of antimony from 39c. to 34½c. per lb. f.o.b. Laredo, Texas. The reason for this large decrease is the discrepancy which had developed between the domestic and foreign quotations.

TITANIUM.—An effort is to be made to make the U.K. at least partly independent of dollar sources of titanium and to give British consumers of this fast developing metal a domestic supply. I.C.I. has announced that it will erect pilot plants to produce wrought titanium as part of a three year research and development programme. Details of the capacity and the number of the plants have not been made known.

Already the efforts to increase the production of titanium in the U.S. are having some results. Output this year is estimated at 1,400 s.tons as compared with 500 s.tons last year. Last week the D.P.A. announced a revised production target for 1955 of 22,000 tons.

TUNGSTEN.—Following the recent reduction in the official domestic selling price of tungsten ore, the prices of ferro-tungsten and tungsten metal powder are to be lower. The new prices are: 80/85 per cent ferro-tungsten, 27s. 6d. per lb. (28s. 7d.) and 98/99 per cent tungsten metal powder 30s. 8d. per lb. (31s. 7d.). The export price of ferro-tungsten has been cut from 30s. per lb. c.i.f. to 28s.

The Secretary for Overseas Trade expects that exports of wolfram ore in 1953 from Uganda to the U.K. may be double the estimated figure of 40 tons (metal content) for the current year.

GOLD.—Western Australian gold output in September amounted to 60,635 oz.

DIAMONDS.—The U.S. continues to take an interest in increasing the diamond output of French Equatorial Africa. Help has already been given under the Marshall Aid Programme, and this is being supplemented by a \$6,000,000 loan by the Defence Materials Procurement Agency to Compagnie Minière de l'Oubangui-Oriental and its subsidiary Soredia. The loan which is intended to finance exploration for new mines and the mechanization of old mines, will be repaid by the supply of diamonds. Since 1938 diamond production from French Equatorial Africa has been stepped up about ten-fold and even without the influence of the new loan, the impetus has not exhausted itself.

British importers of South African diamonds are no longer exempt from the Union's export control regulations. Since the beginning of last week South African exporters must sell at least 40 per cent of their exports for dollars. Included in this total is exports to Britain. This move has been made in an attempt by South Africa to prevent loss of foreign currency through cheap sterling diamond sales.

The London Metal Market

(From Our Metal Exchange Correspondent)

Trading in tin on the London market has again been rather quiet, with prices inclined to ease after the firmness apparent on Thursday last. Stocks of tin in warehouse at the end of last week showed a further decline, and the backwardation remains around £20 per ton. In the East, price fluctuations have been small but with a slight downward tendency.

The Eastern price on Thursday morning was equivalent to £959 c.i.f. Europe. On Thursday the market was easier.

Lead had a sharp rise on Monday of about £6 per ton, but the advance has not been maintained. The Ministry of Materials announced on the 4th inst. that arrangements have been made for the sale to producers of most of the remaining Ministry commercial stocks of lead, to be priced on the basis of the monthly average London Metal Exchange quotation over a period of 14 months. This will leave the Ministry with about 9,000 tons which will be available to meet current needs of consumers to the extent that they cannot be supplied from normal trade sources. This is presumably the tonnage which is left in Ministry hands after transferring an unspecified quantity to the national stockpile, and will be disposed of gradually as opportunity offers. The Ministry expects that there will be sufficient prompt lead available in the course of the next few weeks from normal sources, and it will then no longer guarantee to sell metal for prompt delivery through the Government Broker.

In the United States the price was advanced by ½c. per lb. on Monday. On Thursday the market was quieter.

There is nothing fresh to report as regards copper and zinc.

CLOSING PRICES AND WEEK'S TURNOVER

	October 30		November 6	
	Buyers	Sellers	Buyers	Sellers
Tin				
Cash	£963	£965	£962	£963
Three months	£944	£946	£942	£943
Settlement				
Week's turnover	370 tons		365 tons	
Lead				
Current month	£86 15s.	£87	£95	£95 10s.
Three months	£86 5s.	£86 10s.	£95	£95 10s.
Week's turnover	5,700 tons		7,725 tons	

Iron and Steel

The strange distortions of the normal flow of trade are illustrated by the delivery of two cargoes of pig iron from Turkey to the north-east coast this week. With 25 blast furnaces in operation this district produces far more iron than any other area, yet local output is still being supplemented by shipments of foreign iron. Such expensive expedients should soon be unnecessary. When the October statistics of production are available it is expected that they will show that the blast furnaces are now turning out iron at the rate of 11,000,000 tons per annum which should suffice for all our needs. Moreover, one and possibly two new blast furnaces will be ready for operation very shortly.

Of course more pig iron is required by the steel plants to compensate for the shrinkage of foreign scrap supplies. Other raw materials are plentiful but ferrous scrap is wanted in much bigger tonnages than are at present available, despite the unremitting efforts of the organizers of the home scrap drive.

Ample tonnages of Continental steel semis are now coming to hand and in some cases it is reported that stock holders are asking that further deliveries should be deferred. Generally the export markets are quiet and it now seems certain that the volume of iron and steel shipments from British ports this year will fall short of last year's total. This decline is mainly due to the import restrictions, but the gap between British and Continental steel prices has been narrowed and in the case of steel bars and rounds, Belgian quotations are too low for our mills to compete.

The languid state of the overseas markets is offset by the intensive pressure for all classes of rolled steel for home use. As yet, only motor manufacturers and ship builders have received increased allocations and other industries must wait until January for the fulfilment of promised improvements. In the meantime ingot production continues to rise, activity of the rolling mills has been accelerated and the progressive improvement on steel supplies promises to give a distinct impetus to many branches of industry.

NOVEMBER 6 PRICES

COPPER

Electrolytic £285 0 0 d.d

LEAD AND TIN

(See our London Metal Exchange report for Thursday's prices)

ZINC

G.O.B. spelter, foreign, duty paid ... £110 0 0 d.d
G.O.B. spelter, domestic ... £110 0 0 d.d
Electrolytic and refined zinc ... £114 0 0 d.d
Special high grade ... £116 0 0 d.d

ANTIMONY

English (99%) delivered,
10 cwt. and over ... £225 per ton
Crude (70%) ... £210 per ton
Ore (60% basis) ... 20s. — 22s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) ... £454 per ton

OTHER METALS

Aluminium, £166 per ton.
Bismuth (5 cwt. lots) 17s. 6d. lb.
(min. 2 cwt. ex-warehouse).
Cadmium (Empire), 14s. 4d. lb.
Chromium, 6s. 3d. 6s. 7d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.o.z.
Iridium, £60 oz. nom.
Magnesium, 2s. 10½d. lb.
Manganese Metal (96% - 98%)
2s. 2d./2s. 3d. per lb. d

Osmiridium, £40 oz. nom.
Osmium, £65 £70 oz. nom.
Palladium, £7 15s. £8 10s. oz.
Platinum, £27 £33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £64 10s.
ex-warehouse
Selenium, 25s. nom. per lb.
Silver 73d. f.o.z. spot and f'd.
Tellurium, 18s./19s. lb.

ORES, ALLOYS, ETC.

Bismuth ... 40% 7s. 6d. lb. c.i.f.
30% 6s. 3d. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (lumpy) £13 2s. per ton c.i.f.
" " (concentrates) £13 2s. per ton c.i.f.
" " Refractory £12 14s. per ton c.i.f.
Baluchistan Metallurgical £14 15s. 6d. per ton c.i.f.
Magnesite, ground calcined £26 - £27 d d
Magnesite, Raw £10 - £11 d d
Molybdenite (85% basis) 105s. 10d. per unit c.i.f.
Wolfram (65%) 410s. c.i.f. U.K. buying
432s. 6d. d d U.K. selling
Scheelite 400s. c.i.f. U.K. buying
422s. 6d. d d U.K. selling
Tungsten Metal Powder 30s. 8d. nom. per lb. (home)
(for steel manufacture)
Ferro-tungsten 27s. 6d. nom. per lb. (home)
Carbide, 4-cwt. lots £32 3s. 9d. d d per ton
Ferro-manganese, home £49 0s. 8d. per ton
Manganese Ore U.K.
(48% - 50%) 6s. per unit
Brass Wire 2s. 8½d. per lb. basis
Brass Tubes, solid drawn 2s. 3d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

Markets were again quiet with only a small turnover. Gilt-edged have continued firm. The steadiness of the £ abroad, the better revenue figures and the balance of trade surplus for the sterling area all had their effect. The result of the American election and High Wycombe by-election had a further cheering influence. Many members feel that we now have a good friend at the head of affairs in the United States. A new £120,000,000 4 per cent British Transport Stock 1972/77 is to be issued at 92½ per cent. Although this move was a surprise, the market took it in its stride and prices remained steady after the announcement. The issue is expected to be a success provided present price levels are held.

Kaffers showed some improvement particularly in the favourite finance houses and Rand shares. This was attributed mostly to French buying in Johannesburg, and London saw little business. The October returns were rather a mixed bag but good increases in working profits were recorded by Blyvoor, West Driefontein, Stiffontein and Vogels. This latter company is now crushing a higher tonnage as the fourth unit of its reduction plant has just started. Among the older mines Randfontein attracted attention.

O.F.S. prices, where changed, improved, but here again London saw little real interest.

West Africans followed the general tendency in all gold issues and Arison, Ashanti and Bibiani improved. Recent development results from Bibiani have strengthened market confidence in the outlook for this property.

West Australian issues showed sharper gains than for many months past. Lake View in anticipation of the dividend and other shares followed in sympathy.

French buying of De Beers found the market short of stock. There was some demand for Anglo American Investment Trust. This company has transferred its interest in Consolidated African Selection Trust and certain other holdings, to the Diamond Corporation in exchange for 2,500,000 shares in the

latter company. This seems to be an internal arrangement between the two companies and De Beers, and should make little difference to the Anglo American Investment's balance sheet.

Coppers were fairly active on hopes that the strike in Rhodesia would find an early settlement. Later, when a tangible result had been announced, prices turned weaker. Messina, which is, of course, outside the strike area, remained firm. Tanks also hardened. The first intimation that the strike might affect British industry if continued for any length of time came when the Minister of Materials announced that allotments brought forward for December would be reduced to 75 per cent. It is hoped that this will only be a temporary measure.

Lead/zinc issues were erratic. The continued fall in the price of the metals earlier in the week was suddenly counteracted by a sharp rise following a speech by Mr. Larson, the American G.S.A. Administrator. In it he suggested that some remedial measures might have to be taken by the U.S. to keep up the prices of lead and zinc and to prevent marginal mines closing down. He also stated that in his opinion the present price in London was artificially low. It is understood that the U.K. Government has now disposed of its stocks of lead. The bulk of these have gone to the strategic reserve and it is thought that about 3,000 tons were sold through market channels during October. Good progress has been made towards ending trading in zinc back to the free market on January 1. Free zinc prices on the Continent this week have been reported as low as £80 a ton. The sharpest rally was in Mount Isa. This company will benefit from copper sales during 1953.

Tin shares were neglected and remained very quiet.

Among the miscellaneous section, asbestos shares turned easier. It is reported from the Cape that companies producing the shorter fibres are encountering some difficulty in selling them although the demand for better quality remains strong.

FINANCE	Price	+ or -	Price	+ or -	MISCELLANEOUS GOLD	Price	+ or -	TIN (Nigerian and	Price	+ or -	
	Nom.	on week	Nom.	on week	(cont'd.)	Nom.	on week	Miscellaneous)	Nom.	on week	
African & European	2½	-	O.F.S.		St. John d'El Rey	23/9	-				
Anglo American Corp'n.	6	+ ¼	Freddie's	7½	Zams	34/0	+ 3d	Geovior Tin	13/9	-	
Anglo	18/6	-	Freddie's N.	8/3				Gold & Base Metal	3/6	-	
Anglo Transvaal Corp'n.	25-	-	Freddie's S.	7 1/16	+ 1d			Jantar Nigeria	11/6	+ 3d	
Central Mining (1 shrs.)	33/9	+ 1/10	F.S. Geduld	2½	-	DIAMONDS & PLATINUM			Tin Tin Areco Mining	10/3	-
Consolidated Goldfields	41/10	+ 7/16	Geoffries	19/6	-	Anglo American Inv.	4½	+ ½	Kaduna Prospectors	4/-	-
De Beers Mines Selection	2-3	- 1/16	Harmyon	3	- 3d	Casta	27/3	-	Kaduna Syndicate	5/4/-	+ 6d
East Rand Consols.	2/3	- 1/16	Lynchburg Estates	19/4	-	Cons. Dia. of W.	4 1/8	-	United Tin	2/9	-
General Mining	3/8	-	Merriesport	3/9	-	De Beers Delf. Bearer	64/9	+ 4			
H.E. Prop.	30/-	-	Mills Wit.	14/9	+ 3d	De Beers Plid. Bearer ..	13/4	-	SILVER, LEAD, ZINC		
Heidelberg Transvaal	9/-	+ 3d	Old Brand	20/-	-	Pots Platinum	8/4½	+ 6d	Broken Hill South	41/10½d	- 2½
Johnnies	46/3	-	President Brand ..	17/6	+ 6d	Waterfall	14/4½	-	Burma Corporation	1/6	- 1½d
Rand Mines	¾	-	President Steyn ..	15/-	-	COPPER			Consol. Zinc	25/3	+ 3d
Rand Selection	27/6	+ 1/10	St. Helena	12/4½	+ 4½	Chartered	56/-	+ 1½	Lake George	14/3	+ 1/16
Sterling	36/3	-	Virginia Ord.	21½	-	Espenaa	3/3	+ 1d	North Broken Hill	51/3	-
Union Corp. (2½ units)	30/6	-	Welkom	21½	- 9d	Indian Copper	5/-	-	New Broken Hill	23/3	- 9d
Vereeniging Estates ..	3½	-	Western Holdings ..	3½	- ½	Messina	4½	+ ½	North Broken Hill	51/3	-
Wits	29/4½	+ 7/16				Nchanga	6½	+ ½	Rhodesian Broken Hill	14/3	+ 6d
West Wits	40/-	-				Rhod. Anglo-American	54/6	+ 3d	San Francisco Mines ..	54/6	+ 3d
RAND GOLD			WEST AFRICAN GOLD			Rhodesian Selection ..	16/3	+ 1d	Urwura	3/10	-
Blyvoor	41/9	+ 9d	Amalgamated Banket	1/6	-	Rhokana	19½	+ 3d	MISCELLANEOUS		
Brakpan	15/9	-	Ariston	5/10½	+ 1d	Rio Tinto	23/4	-	BASE METALS & COALS		
Chib. Deep	2/6	- 7/16	Belletti	17/3	- 9d	Roon Antelope	13/6	-	Amal. Collieries of S.A.	47/-	-
Consol. Main Reef	30/7½	-	Bibiani	3/3	- 1d	Selection Trust	39/-	+ 3d	Associated Manganese ..	36/-	-
Crown	40/-	+ 1/3	Bremang	2/6	- 1d	Tatka	61/6	+ 1/6	Cape Asbestos	17/9	-
Daggas	34/-	+ 10½	G.C. Main Reef ..	3/8	-	Thames Sulphur Br.	42/6	-	C.R. Main Reef	40/3	- 3d
Dorefontein	2/8	-	Koona Consolidation Trust	6/-	+ 3d	TIN (Eastern)			Consol. Murchison	27/-	-
Durban Deep	17/6	-	Konoongo	2 1/16	-	Ayer Hattam	24/6	-	Mashaba	8d	-
E. Daggas	40/-	+ 7/16	Lyndhurst Deep ..	1/-	-	Bangrin	7/3	- 6d	Natal Navigation	3/8	-
E. E. Daggas (4½ units)	3/8	-	Marlu	2/6	-	Gopeng	10/3	-	Rhod. Murchison	11/6	- 9d
E. Rand Props	5/8	-	Taqah & Abosso ..	2/6	-	Hongkong	8/-	-	Turner & Newall	9/6	- 9d
Geduld	12/6	-	AUSTRALIAN GOLD			Ipoth	21/3	-	Wankie	16/4½	-
Govt. Areas	6/6	-	Boulder Perseverance	2/-	-	Kamunting	10 1/16	- 7d	Witbank Colliery	50/4	-
Greenfield	11/9	+ 7/16	Gold Mines of Kalgoorlie	20/10/4	-	Kepong Dredging	7/6	-	CANADIAN MINES		
Libanon	21/3	- 9d	Great Boulder Corp.	5/-	+ 14½	Kinta Tin Mines	12/1½	-	Dome	137½	+ 3½
Luijardsvlei	18/4½	- 1/10	Laque View and Star ..	7/6	-	Malayan Dredging	24/6	+ 1d	Elliot Grey	229½	+ 8
Mariveau	25/7½	-	Mount Morgan	18/14	-	Pengkalen	15/3½	-	Hudson Bay Mining	1102½	- 1½
New Kleinfontein	13/-	-	North Kalgurli	12/6	+ 6d	Petaling	14/3	-	International Nickel	181½	- 8½
New Pioneer	10/9	- 6d	South Kalgurli	7/9	- 3d	Rambutan	12/6	-	Mining Corp'n. of Canada	158	-
Randfontein	21/3	- 1/3	Western Mining	9/3	- 3d	Siamena Tin	21/6	- 1½d	Nordla	1150	- 81
Rosendal Deep	5/6	+ 1½	MISCELLANEOUS GOLD			Southern Kinta	25/9	-	Queomont	18½	-
Simmer & Jack	35/7½	-	Globe & Phoenix ..	42/6	- 1/3	S. Trobach	12/9	-	OIL		
S.A. Lands	22/9	+ 1½	Champion Reef	8 1/16	- 1d	Sunung Kinta	7/9	-	Anglo-Iranian	5½	-
Spitfontein	22/9	-	Falcon Mines	7/9	- 9d	Tekka Taiping	22/9	- 3d	Apex	40/7½	- 1½
Sub Nigel	42/6	-	Globe & Phoenix ..	25/-	-	Tromoh	22/9	-	Attock	23 1/16	-
Van Dyk	17/-	-	G.L.P. Rhodesian ..	4/8	-	TIN (Nigerian and			Burmah	43/9½d	+ 7½d
Vogelstruisbult	29/3/3d	-	London & Rhodesian	1/3	-	Miscellaneous)			Canadian Eagle	14/3	-
West Driefontein	50/7½	+ 7/16	Motapa	1/8	-	(cont'd.)			Mexican Eagle	22/7½	- 10½d
W. Central Consolidated	43/1½	-	Myore	4/7	-	Amalgamated Tin	9/9	- 6d	Shell (bearer)	2/6	-
Western Reefs	43/1½	-	Naudydring	5/8	-	Ararat Tin	30/-	- 3d	Trinidad Leasehold ..	25 1/16	- 1/16
			Oregrund	2/6	-	Basichi	4/6	-	Unimex	25/7½	-
			Orville	11/-	-	British Tin Inv.	14/10½	+ 1/4	Ultramar	28/6	-
						Ex-Lands Nigeria	4/7	+ 1d			

COMPANY NEWS AND VIEWS

Increased Costs Reduce Profits at Venterspost

A decrease of 83,000 tons in the tonnage milled, together with a rise in working costs, of 7s. 9d. per ton milled to 42s. 8d. of Venterspost Gold Mining during the year to June 30 last brought about a substantial fall in working profits.

Year to June 30	Milled Tons (000)	Grade (dwt.)	Yield (oz.)	Profit per ton s. d.	Ore Reserves Tons (000)	Value (dwt.)
1952	1,180	4.4	260,648	14 2	2,533	5.4
1951	1,263	4.2	266,301	19 7	2,790	5.2

Although tax attracted was more than halved, the net profit figure does not compare with the previous year's net earnings and shareholders' dividend income contracted appreciably.

The one cheering feature of the profit and loss account was the larger allocation to reserves which raised the general reserve account to £2,120,351, albeit at the expense of the forward balance.

Year to June 30	Working Profit	Tax	Net Profit	To Reserves	Divi- dend	Carry Forward
1952	£80,339	£224,054	£584,779	£333,398	11½	£8,968
1951	£1,239,603	£456,073	£727,235	£231,953	20	£43,420

Development footage advanced during the year amounted to 75,650 ft. compared with 61,007 ft. for the previous year. Footage sampled totalled 30,675 ft., of which 16,280 ft. equal to 53.1 per cent, proved payable at an average value of 6.3 dwt. per ton over an estimated stoping width of 54.6 in.

The annual meeting will be held in Johannesburg on November 12. Dr. W. J. Busschau is chairman.

Sub Nigel Pays Less

The factors affecting the earnings of Venterspost Gold (reviewed elsewhere in these columns) were also apparent in the report and accounts of the Sub Nigel for the year ended June 30 last. Tonnage throughput showed a decrease of 1,800 tons while working costs rose by 2s. 10d. to 49s. 1d. and the impact of these two features was reflected in the working profit which contracted by £373,548 compared with the previous year.

Year to June 30	Milled Tons (000)	Grade (dwt.)	Yield (oz.)	Profit per ton s. d.	Ore Reserves Tons (000)	Value (dwt.)
1952	794	6.9	277,352	40 10	1,766	8.4
1951	796	7.4	296,196	50 1	1,915	8.4

Development footage advanced during the year totalled 44,717 ft. compared with 44,526 ft. in the previous year, an increase of 191 ft. Footage sampled amounted to 37,115 ft., of which 12,135 ft., equal to 32.7 per cent, proved payable at an average value of 9.3 dwt. per ton over an estimated stoping width of 36.8 in.

Year to June 30	Working Profit	Tax	Net Profit	To Reserves	Dividends	Amount
1952	£1,621,895	£825,103	£826,677	£51,482	8½	£775,195
1951	£1,995,443	£1,007,536	£1,017,254	£94,204	110	£974,531

The annual meeting will be held in Johannesburg on November 19. Mr. E. S. Hallett is chairman.

Rand and O.F.S. Mine Returns for October

The Rand gold mining returns for October were based on a gold price of 249s. 3d. per oz. This price was 7d. per oz. less than that prevailing in September but the same as that ruling in August.

In the Anglo American group only Welkom showed increased profits compared with September, the better grade of ore milled offsetting the lower tonnage throughput and the rise in costs by 1s. 1d. to 42s. 11d. per ton milled. Daggafontein and Daggafontein East announced the largest profit declines in the group and in both cases the tonnage milled was lower and working costs higher.

Companies in the Union Corporation produced results not notably different from the previous month. Materially, St. Helena and Van Dyk all showed lower working costs per ton and the first two mentioned reported small profit increases.

Vogels and West Driefontein attracted all the attention in the Gold Fields group, the profit expansion in both instances being appreciable compared with the September returns.

In the Central Mining group, Blyvoor was outstanding, the profit expansion being nearly £20,000 higher than in September, E. R. Props and City Deep also showed improvement but Durban Deep returned a profit figure some £7,000 lower than in the previous month.

Stilfontein in the Strathmore group nearly doubled its profits compared with September and raised its tonnage output by 600 tons to 53,000 tons.

Producers in the "Johnnies" group made steady progress. Government Areas being the one company to increase its profits compared with September and raised its tonnage throughput being nearly £3,000.

South Roodepoort and West Rand Consolidated in the General Mining group both did better than in the previous month and both were able to reduce working costs, the former by 10d. to 39s. per ton and the latter by 1s. 1d. to 26s. per ton.

Rand Leases in the Anglo Transvaal group reported a higher tonnage crushed and larger output than in September but a 2d. per ton rise in costs to 35s. 8d. per ton reduced profits below the September level by £4,500.

Company	October, 1952			Current Financial Year			Last Financial Year		
	Tons (000)	Yield (oz.)	Profit (£000)	Tons (000)	Yield (oz.)	Profit (£000)	Tons (000)	Yield (oz.)	Profit (£000)
Gold Fields									
Lithuan	65	17,001	43.7	334	66,807	172	336	62,512	168
Luipaards V.	104	19,722	52.0	413	77,927	208	404	74,764	229
Rietfontein	27	6,049	26.9	270	60,173	275	273	60,804	313
Robinson	121	18,065	13.5	412	185,417	121	1123	177,227	111
Simmer & J.	128	20,545	18.6	1,241	197,907	163	1,252	196,906	308
Sub Nigel	69	23,460	121.0	270	93,251	492	268	94,548	531
Venterspost	109	25,071	67.7	422	96,536	256	398	86,675	273
Vlakfontein	39	14,235	80.8	374	136,771	793	369	138,390	807
Vogels	92	23,345	93.5	808	210,478	821	774	194,691	830
West Drief.	27	17,533	131.9	103	61,788	438	—	—	—
Anglo American									
Brakpan	122	21,466	32.2	1,177	212,154	362	1,149	216,080	575
Daggas	229	54,285	371.8	2,327	554,100	3908	2,330	573,335	450
East Daggas	91	16,605	54.3	658	170,787	624	990	181,557	833
S. A. Lands	107	19,201	61.3	1,104	198,949	699	1,145	200,613	805
Springfont.	158	21,442	18.0	1,642	215,979	190	1,675	217,759	326
Welkom	55	10,309	10.5	495	84,996	141	—	—	—
W. Reef East	115	23,718	99.4	1,123	234,432	1,028	1,003	222,484	1,130
Central Mining									
Blyvoor	109	65,684	570.4	432	261,208	2,281	438	284,272	2,582
City Deep	154	31,665	24.1	1,532	311,086	256	1,635	330,371	710
Consol M.R.	188	25,620	26.8	1,743	102,642	118	782	105,584	201
Crown	300	43,743	42.3	2,717	433,663	392	2,731	463,399	966
D. Roodep't	190	34,432	85.2	1,816	313,624	847	1,797	308,408	1,010
East Rand P.	202	44,045	135.0	2,063	443,596	1,457	2,106	447,638	1,794
Modder B.	57	6,373	4.9	566	62,531	64	542	62,150	92
Modder E.	117	13,816	20.6	1,476	55,042	95	484	56,901	148
Rose Deep	83	11,611	8.2	832	115,742	99	829	117,053	212
Welgedacht	36	4,380	4.7	139	16,900	18	135	15,956	17
I.C.L.*									
E. Champ	29	4,547	8.3	303	46,174	83	326	48,559	109
Govt. G.M.A.	260	33,320	55.0	2,453	322,102	505	2,297	314,625	558
New State	46	6,103	1.0	454	63,027	10	605	77,271	26
Randfontein	332	41,173	30.0	3,492	415,618	296	3,418	412,795	449
Wit. Gold	62	7,164	2.5	600	71,228	25	590	68,136	34
Union									
East Geduld	146	43,739	345.0	1,452	435,642	3,449	1,455	436,553	3,568
Geduld Prop.	107	15,595	32.6	1,051	152,503	350	1,052	154,368	454
Grosvlei	105	42,220	265.3	1,942	420,710	2,925	1,955	437,027	2,950
Maricvale	62	15,517	72.4	608	152,482	709	609	151,371	748
St. Helena	55	10,965	10.9	485	95,928	58	—	—	—
Van Dyk	100	15,265	11.5	1,058	154,087	123	1,004	151,542	174
General Mining									
S. Roodep't	28	6,355	24.3	110	24,933	95	109	24,365	91
W. Rand Con.	235	34,950	129.3	2,157	332,583	1,242	2,117	337,828	1,600
Anglo Transvaal									
N. Kloof's P.	12	14,410	1.0	113	12,806	10	90	10,722	12
Rand Leases	184	30,342	54.0	1,739	122,903	252	733	122,716	339
Village M.R.	34	5,298	14.7	135	21,166	59	136	21,186	73
Others									
N. Kleinfont.	114	14,817	31.0	1,072	140,107	141	1,075	139,971	416
Sparwater	11	24,75	1.9	105	23,824	124	104	23,554	122
Stilfontein	53	12,120	31.0	183	37,467	31	—	—	—
W. Nigel*	17	—	7.4	67	—	29	40	—	2

Note.—Profit figures are in all cases figures of working profit excluding profit from sale of gold at premium prices. In case of groups marked with an asterisk () profit includes sundry revenue. Profit figures preceded by L indicate a loss.

Wit Nigel's Lower Net Profit

Witwatersrand Nigel, the Far East Rand gold producer, was registered in South Africa in 1933, but has yet to declare a dividend on its issued capital of £996,840 in shares of 2s. 6d. each.

Year to Milled	Grade	Yield	Profit	Ore Reserves
June 30	Tons	(dw.)	per ton	Tons
(000)	(dw.)	(oz.)	s. d.	(000) (dw.)
1952	136	4.8	32,689	3 3 690
1951	120	5.1	30,561	5 3 661

During the year to June 30 last the tonnage throughput increased by over 16,000 tons and but for a slight lowering in the grade of ore treated the improvement in gold production would have been more marked.

Year to Mining	Mining	Tax	Net	Dividend	Carry Forward
June 30	Revenue	Costs	Profit	%	£
1952	420,656	390,674	67	26,919	Nil
1951	396,345	356,855	Nil	38,273	Nil

Mining costs were, however, much higher and after paying provincial tax arrears amounting to £67 the net profit was £11,354 lower than for the preceding year.

The annual meeting will be held in Johannesburg on December 4. Mr. S. F. Dench is chairman.

Indians Forge Ahead in October

The October mine returns for the four Kolar Gold Fields producers show a quickening in the tempo of mining operations.

Champion Reef's output has not been bettered since July, 1951, when 6,196 oz. were produced but even so this was recovered from a mill throughput of over 13,000 tons. At the current monthly rate of recovery this company may yet overhaul the previous year's cumulative totals. It will be interesting to see if the grade of ore sent to the mill can be maintained at its present level.

Company	October, 1952		Months Since Year End		Current Financial Year Total to Date		Last Financial Year Total to Date	
	Tons	Yield (oz.)	Year	End	Tons	Yield (oz.)	Tons	Yield (oz.)
Champion Reef..	120	6,064	7	90	41,587	103	42,250	
Mysore.....	19	6,910	7	125	45,133	114	36,966	
Nundydoo*....	24	6,789	7	156	40,709	137	32,321	
Ooregum.....	10	3,095	7	73	21,673	73	18,658	

*Includes tailings.

Results announced by Mysore must be considered as record or near-record monthly results, and it is obvious from the cumulative totals for the current year that, barring unforeseen accidents, end year figures will impress.

Nundydoo, too, recorded excellent results and all signs point to the company enjoying a prosperous year.

Ooregum announced good but not outstanding results, yet the total output for the first seven months of the current year shows an advance of some 3,000 oz. compared with the corresponding period of the previous year.

Company Shorts

Kwahu Mining Raises Dividend.—The modest fall in the gross revenue of Kwahu Mining Co. (1925) for the year ended June 30 last by approximately £2,000 was due to the sharp contraction in profits in the sale of investments to £534 compared with £14,797 in the preceding year. This substantial decrease would have made its impact felt much more had it not been for the rise in dividend income from £12,453 to £28,292, chiefly as a result of the larger dividend distributions declared by Gold Coast Main Reef.

Year to Gross	Expenses	Tax	Net	Dividend	Carry Forward
June 30 Revenue			Profit	%	£
1952	29,260	14,508	1,416	13,336	15
1951	31,236	5,928	494	24,814	12½

The company's investment portfolio is a strong one and at June 30 last quoted investments had a book cost of £221,763 and an aggregate market valuation of £228,867. The directors consider that these shares have scope for appreciation in the

future, which assumption appears to have a firm basis as the portfolio includes Stifffontein Gold, Harmony, Western Holdings and Ariston. However, the company's main holding is still in Gold Coast Main Reef whose results for the year ended June 30, 1951, contrasts favourably with the preceding year.

During the year the company absorbed several of its concessions in the Gold Coast, the book cost of which amounting to £9,689 has been written off. The company plans to abandon its remaining concessions there with the exception of Siwum, during the current financial year.

Central Mining F.S.A. Increases Debit Balance.—The report and accounts of Central Mining Free State Areas for the year ended June 30 last showed that the debit balance, after taking into account the year's operations, was raised to £202,037, compared with £112,005 at the end of the previous financial year.

The total book value of the company's investments at June 30 last was £2,430,249 (£2,359,968), but this figure does not take into consideration the depreciation of £660,891 in the market value of these investments. Other salient features of the accounts were the announcements that the total amounts spent up to June 30 last on the acquisition of mineral rights and on current options and prospecting ventures totalled £221,575; and that Harmony Gold Mines repaid the short-term loan facilities granted to it together with the interest amounting in the aggregate to £208,736.

The annual meeting will be held in Johannesburg on November 21. Mr. G. V. R. Richdale is chairman.

Anglo American Investment Trust's Arrangement with the Diamond Corporation.—Anglo American Investment Trust have announced that an arrangement has been concluded by which the Trust's holdings of 1,088,826 shares in Consolidated African Selection Trust, "Casts," 16,620 shares in Société Minière du Bekeca, and 13,375 shares in Companhia de Diamantes de Angola have been transferred to the Diamond Corporation, Ltd., in exchange for 2,500,000 shares in that Corporation.

The Diamond Corporation, a subsidiary of De Beers Consolidated Mines having an issued capital of £17,500,000 in shares of £1 each (after providing for the issue of 2,500,000 shares referred to above), acts as the link between the producers of diamonds in the Union of South Africa and the non-union producers. It also enters into periodical contracts with the leading non-union producing companies, which include the three companies whose shares have been taken over for the purchase of their production.

It was represented to Anglo American Investment Trust by De Beers Consolidated Mines, the announcement states, that it would be desirable in the interests of the industry as a whole and therefore of benefit to the Trust to have the Trust's shareholdings in non-union producing companies concentrated as permanent holdings in the hands of the Diamond Corporation. The directors of the Trust concurred in this view.

The ratio of exchange between the shares in the diamond mining companies now disposed of and the shares in the Diamond Corporation, now acquired was arrived at after a valuation had been made by the auditors of the Diamond Corporation, who are also joint auditors of the Trust, whose directors consider that the basis on which the exchange has been made is fair to both parties.

Rooiberg Maintains Distribution.—The total net revenue of the Rooiberg Minerals Development Co. for the year ended June 30 last received from the sale of tin and pyrites went ahead from £498,217 to £521,433. Unfortunately, mining costs were higher as were taxation liabilities, £96,299 against £93,580 and net earnings for the year at £246,852 were some £6,000 lower compared with the previous year.

The dividend distribution was maintained at 87½ per cent which absorbed £175,000 and after allocating £25,000 (£45,000) to reserve, appropriating £4,000 (£3,585) for the employees' fund contribution, and £43,665 (£14,983) for capital expenditure, the forward balance at the fiscal year end was £36,043 against £36,804 brought in.

The annual meeting will be held in Johannesburg on November 27. Mr. A. W. Stewart is chairman.

Kalgoorlie Electric Power and Lighting.—Kalgoorlie Electric has announced it has received information from Australia to the effect that adequate rail transport to deliver coal supplies to the plant will not be available before April, 1953. This, the announcement states, is a further disappointment to the company as the construction of the new coal burning plant is sufficiently advanced to permit steaming this year.

Siamese and Bangrin Make Deal with Rio Tinto.—Siamese Tin Syndicate have announced that, in partnership with Bangrin Tin Dredging, it has reached a tentative agree-

ment with the Rio Tinto Co. for the unwatering and examination of the Leadhills and Wanlockhead Properties, with a view to the subsequent formation of an operating company.

The Rio Tinto Co., Ltd., will provide 51 per cent of the necessary funds and the announcement states that stockholders will receive further details together with a notice of an extraordinary general meeting to be called in due course.

Union Minière's Capital Determined in Congolese Francs.—An extraordinary meeting of the shareholders of the Union Minière de Haut Katanga approved three resolutions on October 30 last.

The first resolution concerned the declaration of the capital of the company in Congo francs (on parity with the Belgian franc) from now on. The second appertained to the raising of the company's capital from 3,000 million to 5,000 million Congo francs by the incorporation of 1,000 million francs from the special reserve and contingency fund and another 1,000 million francs from the special renewal fund which amounts to exactly that sum.

The final resolution approved proposed to establish the registered office of the company in Elisabethville in the Belgian Congo. The administrative office of the company is to remain in Brussels.

Bushtick Mines (1934).—Although Bushtick Mines (1934) showed a working profit for the year of £10,277 which compares favourably with a working loss of £7,645 incurred in the previous year, provision for income tax amounted to £15,000 leaving an adverse balance of £4,691. The tax liabilities are, however, payable on recoupments from sale of assets as well as on working profit and the disposal of assets at Bushtick Mine realized £89,187 and a further £4,682 was realized from assets disposed at Killarney and Hibernia Mines. Against these realizations were offset the adverse balance on funds appropriated for capital expenditure at June 30, 1951, of £2,951 and capital expenditure incurred during the year at Killarney and Hibernia amounting to £27,126, thus giving a balance of £63,792 which has been transferred to general reserve.

During the year salvaging and dismantling of materials was completed and efforts are being made to interest industrialists and others in the Bushtick Mine Camp. The possibility of finding a purchaser for the company's shares at a price slightly in excess of the amount likely to be distributed in a winding-up is being explored. If this possibility fails it is proposed to place the company in liquidation.

Trepca's Increased Revenue.—Gross revenue of Trepca Mines for the year ended September 30 last was £36,516 compared with £28,595 for the preceding year. Outgoings were much heavier due to the loss experienced on realization of investment amounting to £9,740 (£107), and to expenses in connection with the company's claim to compensation for its former property in Yugoslavia totalling £4,962 (£824). However, taxation liabilities were relatively light, £1,921 against £11,550, giving a net profit figure for the year of £14,007 against £10,032 in 1951.

The allocation to investment reserve was doubled at £50,000 and the sum of £12,000 (£5,000) was transferred to exploration reserve. The forward balance at the financial year end amounted to £190,747 against £238,740.

The directors in their report state that the company under its agreement with Selection Trust has accepted participations in mining ventures, and although none of these ventures have been named, it is stated that work is going ahead on three of them and that the others have been abandoned.

The annual meeting will be held in London on November 27. Mr. A. Chester Beattie, Jr. is chairman.

Eastern Transvaal Consolidated Pay 7½ Per Cent.—The net profit of Eastern Transvaal Consolidated Mines for the year ended June 30 last, after providing for all expenses including £61,500 (£97,000) for taxation was £171,031 compared with £124,393 in the previous year. Shareholders participated in the improved profit position, receiving 7½ per cent (5 per cent) which required £78,750, and after allocating £27,714 (nil) to capital reserve, and providing £5,000 for stores obsolescence, the carry forward at the fiscal year end amounted to £203,715 against £116,434 brought in.

The annual meeting will be held in Johannesburg on November 27. Mr. L. P. Kent is chairman.

Harmony Lands Make Small Profits.—The profit and loss account of Harmony Lands and Minerals for the year ended June 30, 1952, showed that net profit, after providing for all expenses including taxation, amounted to £174. The carry forward at the fiscal year end was £13,384 compared with £13,211 brought in.

The annual meeting was held in Johannesburg on Nov. 6. Mr. S. G. Menell is chairman.



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RHODESIAN ANGLO AMERICAN LTD.**NOTICE TO HOLDERS OF STOCK WARRANTS TO BEARER****Dividend No. 32 Coupon No. 32**

With reference to the notice of declaration of dividend advertised in the Press on October 23, 1952, the dividend on stock represented by stock warrants to bearer will be paid on or after December 11, 1952, upon surrender of Coupon No. 32 at Barclays Bank (Dominion, Colonial and Overseas), Circus Place, London Wall, London, E.C.2, where listing forms may be obtained.

Coupons may also be presented for payment in French currency at Banque de l'Union Parisienne, 6 and 8, Boulevard Haussmann, Paris, 9c.

Coupons presented at Barclays Bank (Dominion, Colonial and Overseas) must be left four clear days for examination and may be presented any day (Saturday excepted) between the hours of 11 a.m. and 2 p.m.

United Kingdom Income Tax as indicated hereunder will be deducted from dividends payable in respect of stock warrant coupons presented for payment in London unless accompanied by Inland Revenue declarations. Where such deduction is made, the net amount of the dividend will be 3s. 5.311d. per 10s. unit of stock, viz.:

	Per 10s. unit of stock s. d.
Declared dividend	5 0
Less United Kingdom Income Tax at 4s. 9d. in the £ on the Gross amount of the dividend of 6s. 6.689d.	1 6.689
Net dividend	3 5.311

For and on behalf of

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA LTD.

Registrars and Transfer Agents in England
11, Old Jewry, London, E.C.2. **W. E. GROVES,**
November 3, 1952. London Secretary.

NOTE

The London Paying Agents have been requested by the Commissioners of Inland Revenue to state:

Under the provisions of Section 348 and the seventeenth schedule of the Income Tax Act, 1952, relating to "Unilateral Relief" from Double Taxation, Northern Rhodesian tax applicable to the Dividend is allowable as a credit against United Kingdom tax payable in respect of the Dividend.

The deduction of tax at the reduced rate of 4s. 9d. in the £ instead of at the standard rate of 9s. 6d. in the £ represents a provisional allowance of credit at the rate of 4s. 9d. in the £. The final rate of credit allowable to a particular Stockholder depends on his personal rate of tax: it may be more or less than 4s. 9d. in the £, but must not exceed three-quarters of the personal rate. Revision of the credit involves a corresponding adjustment of the gross amount of the Dividend for United Kingdom tax purposes.

A large Mining Company operating in Upper Burma, climate sub-tropical and healthy, has vacancies for:

UNDERGROUND WORK

SENIOR STUDENT ENGINEER: A Graduate of a recognized School of Mines with previous experience essential. Salary Ks. 700 (£52.10.0) monthly, plus a variable cost of living allowance at present Ks. 300 (£22.10.0) monthly. Four years Agreement; six months' leave on full pay at end of four years. Passage out and home. Partly furnished quarters and medical attention free. The Company contributes one month's salary per annum to a Provident Fund and employee makes similar contribution.

ASSISTANT MINE SURVEYOR: A Graduate of a recognized School of Mines, not necessarily with previous experience. Salary Ks. 560 (£42) monthly, plus a cost of living allowance at present Ks. 300 (£22.10.0) monthly. Four years Agreement. Six months' leave on full pay at end of four years. Passage out and home. Partly furnished quarters and medical attention free. The Company contributes one month's salary per annum to a Provident Fund and employee makes similar contribution.

Write Box V.485, Willing's, 362 Gray's Inn Road, London, W.C.1, with full details, experience and references.

NATIONAL COAL BOARD invite applications for a superannuable appointment in the Mining Operations Branch at London Headquarters. Candidates must have a First Class Certificate of Competency. Experience of modern methods of roof support and/or power stowing installations would be an advantage. Duties will include visits to Divisions, Areas and Collieries in connection with these subjects.

Salary within the range of £1,200 to £2,000 per annum, according to qualifications and experience.

Write, giving full particulars (in chronological order) of age, education, qualifications and experience (with dates) to National Coal Board, Establishments (Personnel), Hobart House, Grosvenor Place, London, S.W.1, marking envelope TT/563. Closing date December 15, 1952. Original testimonials should NOT be forwarded.

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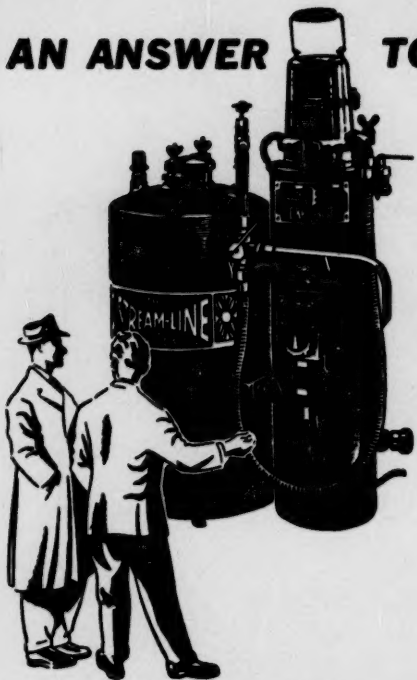
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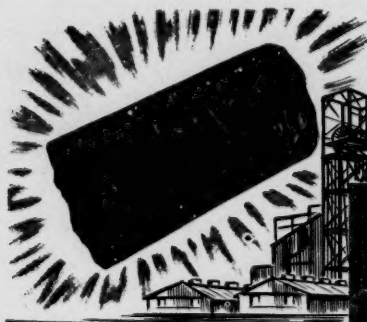
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